

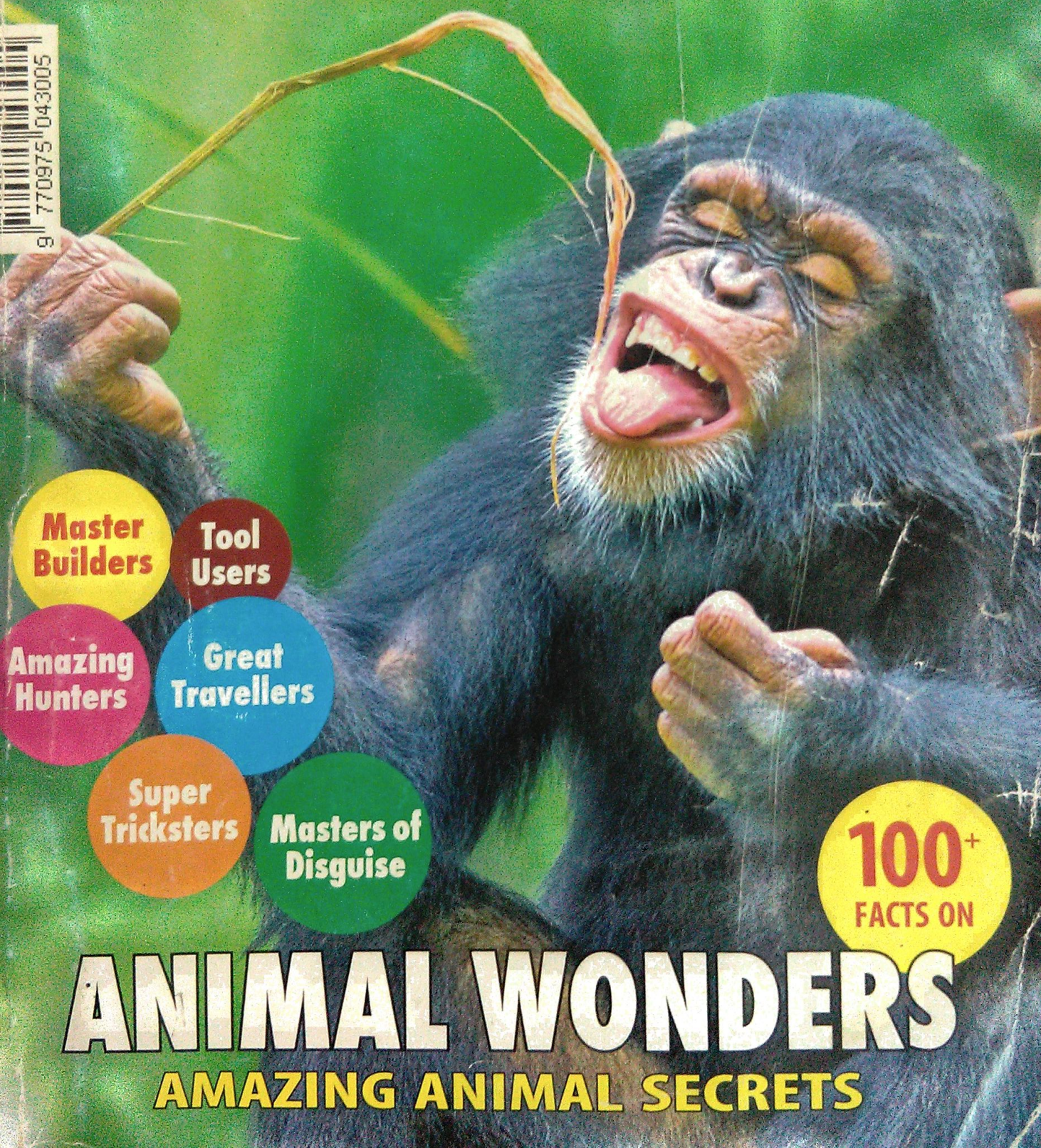
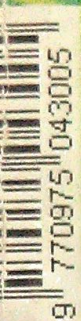
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MANORAMA

# TELL ME WHY

No:109

₹25



**Master  
Builders**

**Tool  
Users**

**Amazing  
Hunters**

**Great  
Travellers**

**Super  
Tricksters**

**Masters of  
Disguise**

**100<sup>+</sup>  
FACTS ON**

# ANIMAL WONDERS

**AMAZING ANIMAL SECRETS**





MANORAMA  
**TELL ME WHY**

October 2015 • Volume: 9 • No: 10

FROM THE HOUSE OF MAGIC POT, THE WEEK, MANORAMA YEARBOOK,  
VARITHA & THE MALAYALA MANORAMA DAILY

**WORLD  
OF WONDERS**

The animal world is full of fascinating wonders.

Though Man is undoubtedly the most intelligent being on Earth, many animals have amazing talents and skills. Man has learnt many valuable lessons from them, too.

There are, among them, super tricksters, master builders, clever tool-users, and amazing hunters.

The unusual adaptations and abilities of animals never cease to surprise even the brightest scientists.

This issue of Tell Me Why is letting you take a small peep into this complex and mysterious world of wonders.



# Masters of Disguise

## Why are animals said to be masters of disguise?

**I**t's tough being an animal. Most animals have to hunt smaller animals in order to eat- and at the same time, take care not to be eaten by bigger animals that are in search of food.

As a result, animals have adapted themselves so that they can blend into their surroundings.

This is necessary so that they are not easily seen, either by the prey they are hunting, or by bigger animals hunting them. This ability is known as camouflage.

One way animals camouflage themselves is by merging into their background. Insects are good at this, because their shells can have so many different colours.

Another way is by having patterns on their bodies that



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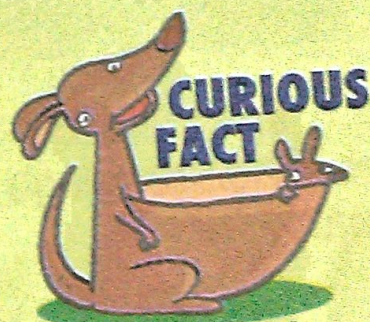
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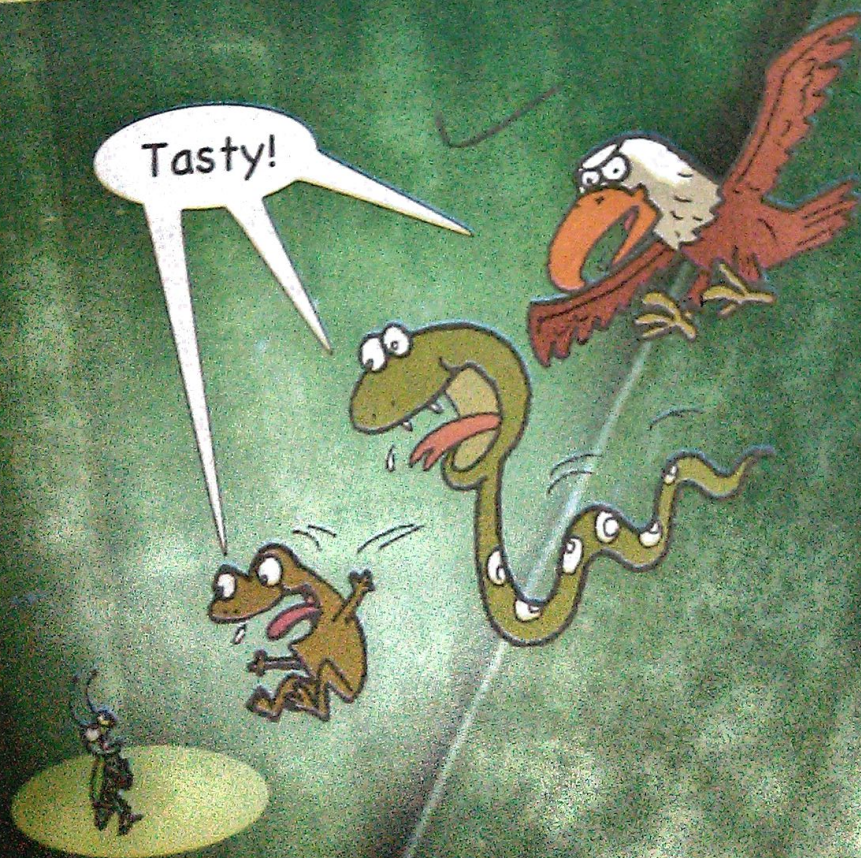
break up their outline, as is with the case of zebras. Some animals pretend to be something they're not, while others build, or find camouflage. For example, decorator crabs attach twigs and rocks to their shells. That way, they blend into their surroundings perfectly.

Whatever the method they use, there is no doubt that -animals are masters of disguise, in one way or the other.

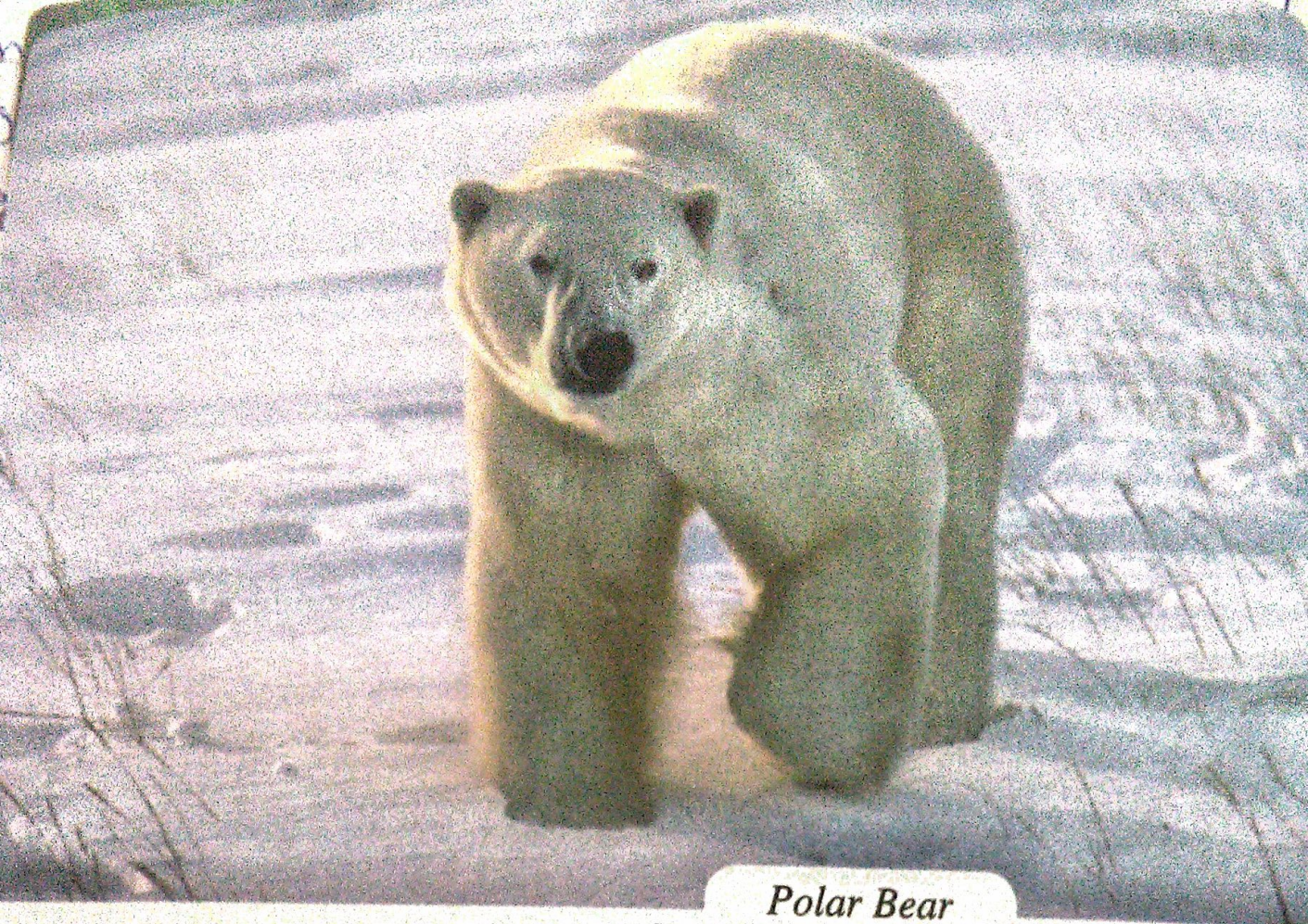


## Origin of the Word

The word 'camouflage' comes from a French word that means 'to disguise'. The French word, in turn, is derived from an Italian word used to convey the same meaning.







*Polar Bear*

### **Which are the most common types of camouflage used by animals?**

**T**here are four basic types of camouflage that animals use. Sometimes, an animal hides itself against a background of the same colour.

For example, polar bears are white in colour to blend in with the snow that surrounds them. This is known as concealing colouration.

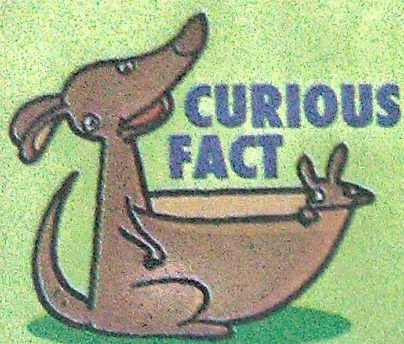
The second type is when an animal has spots, stripes, or patterns on its coat to break up

its outline, so that it is not easily visible against the background. This is known as disruptive colouration. A good example is the tiger.

Some animals look like another object to camouflage themselves. For example, there are insects that look like sticks. This type of camouflage is called a disguise.

Finally, there is a type of camouflage known as mimicry, in which an animal pretends to be another dangerous animal. The hawk moth is an example of this type.





## Chameleons

Chameleons can change from brown to green, red, or even pink and orange. They change their colour according to their moods, and not necessarily to blend in with their surroundings.

### Why do some animals change colour?

**M**any animals have developed special adaptations that let them change their colouration as their surroundings change.

One of the biggest colour changes in an animal's surroundings occurs with the changing of the seasons. In the spring and summer, an animal's surroundings will be green and brown in colour, while in the winter, snow makes the world white.

Many animals deal with this by producing

different colours of fur or feathers, depending on the time of the year. Their coats are brown in summer, and white in winter.

As summer begins to approach again, the white coat is once again replaced with a brown one. Animals also change colour because of changes in their mood, in the temperature or because of stress.







### *A Group of Zebras*

#### **Why is the zebra striped?**

**Z**ebra live in grasslands. The wavy lines on a zebra's coat blend in with the waving grass surrounding it. This makes it difficult for an enemy to spot it.

It is true that the zebra's stripes are black and white, while the grass is green or yellow. However, the zebra's biggest enemy is the lion, which is colour blind. So, if the zebra stands perfectly still, a lion will not be able to make out that it is there at all.

Zebras usually travel in groups. When a zebra is travelling in a group, its stripes merge with the stripes of hun-

dreds of others, creating confusion in a lion's mind.

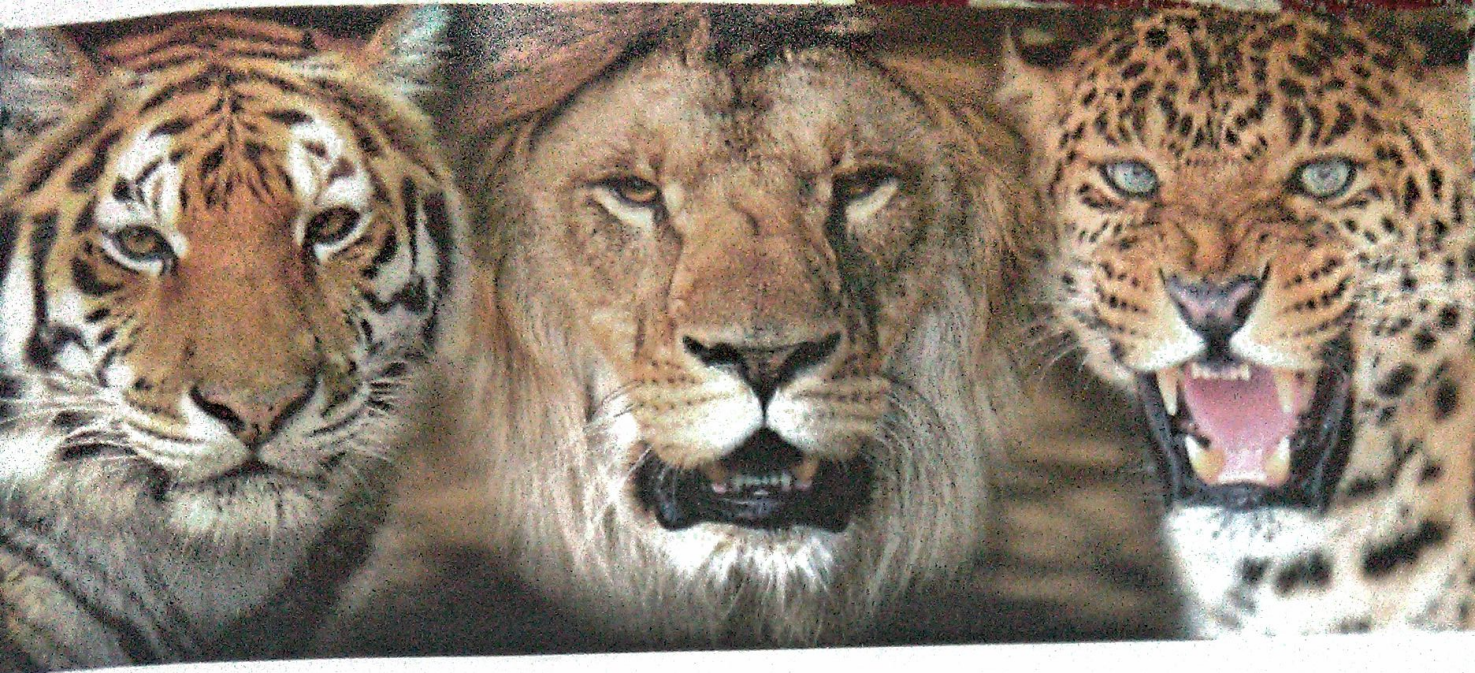
The lion sees a wavy mass of stripes, and doesn't know which animal to attack. So, it will charge blindly, giving the zebras an opportunity to scatter, and flee.

#### **Why don't lions have stripes like tigers?**

**M**ost of the animals that belong to the cat family have stripes, spots, or other patterns on their coats. These include tigers and leopards.

The reason for this is that these cats live in thick jungles, and they hunt alone, and mainly at night. The stripes and spots provide excellent camouflage for them.





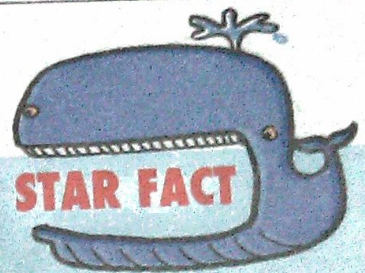
The lion, on the other hand, lives in more open surroundings - generally in grasslands. So, spots or stripes will not make them blend in with the background.

Lions hunt in groups, and mostly during the day. Lions are also masters of camouflage when on the hunt.

Why should tigers have all the stripes?



### *Tiger, Lion, and Leopard*



### **Big Impression**

Many small fish have stripes. They swim together in a group, called 'school'. When they do this, their stripes blend together, giving the impression of one large fish. This frightens away their enemies.



## Why are leaf tailed geckos good at camouflage?

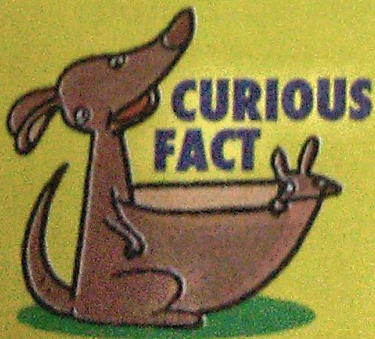
**G**eckos are a type of lizard found in tropical countries. The leaf tailed gecko is unique in that it is found only on the African island of Madagascar.



Leaf tailed geckos are brown in colour, and have broad flat tails that are shaped like leaves. Some of them even have notches on their tails to increase the resemblance to a decaying leaf.

The skin of this gecko resembles the bark of a tree, and so, when the gecko is basking in the sun on a branch, it is practically impossible to detect it. Its enemies, which include birds, rats, and snakes, are fooled into thinking it is a branch.

*Leaf Tailed Gecko*



## Fake Eyes

You must have seen many butterflies with large circular spots on their wings. These spots are known as eyespots, because they look like the eyes of larger animals. Their

purpose is to confuse an enemy into thinking that the butterfly is not a butterfly, but another larger animal.





*Stick Insect*

### Why are stick insects so successful at camouflage?

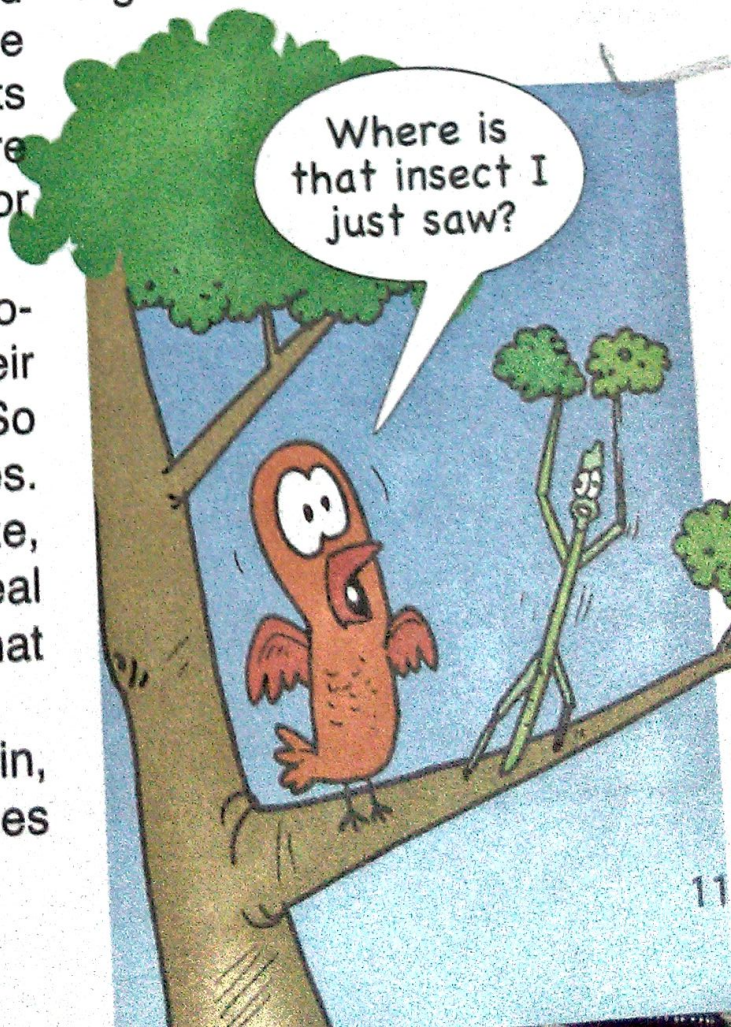
**M**ost animals camouflage themselves to blend in with a particular background. However, a few are so well-disguised they're practically invisible almost anywhere. Stick insects are a good example. They are insects that look like twigs or sticks.

Stick insects are herbivorous, which means that their diet is a vegetarian one. So they spend their lives on trees.

Since they are small in size, they would make a tasty meal for birds and small reptiles that live on trees.

However, their brown, thin, long, stick shaped bodies

make them almost invisible to their enemies. Stick insects can also be green in colour. They tend to freeze when threatened, and may even sway to mimic a branch blowing in the wind.







*Snowy Owl*

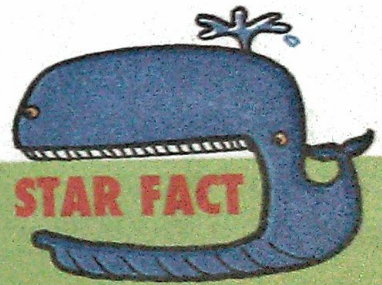
### Why is the snowy owl special?

**T**he snowy owl is a rare bird that lives all year long in the Arctic Circle.

It is one of the largest species of owls, and it makes its nest on the ground. These beautiful birds have white and dark brown feathers covering their bodies that camouflage them in their usually snowy habitat.

The snowy owl is well equipped for hunting, and can see longer distances than humans. Also, their eyes have circles of feathers around them that help reflect sound to their ears. They prey on lemmings and foxes, and the prey usually never sees them coming.

Most owls hunt only during the night. However, since snowy owls are so well camouflaged, they hunt during the day as well.



### STAR FACT

### What's your name?

Snowy owls have lots of names: ghost owls, tundra ghosts, Arctic owls, and great white owls.





## Did or Didn't

Some believe that the call of katydids sounds like someone calling out the words 'Katy Did! Katy Didn't.' That's how the bird gets its name.

### How does the katydid camouflage itself?

**K**atydids are insects closely related to grasshoppers. They are masters of camouflage. Katydid are mainly found in the tropics, but some reside in North America.

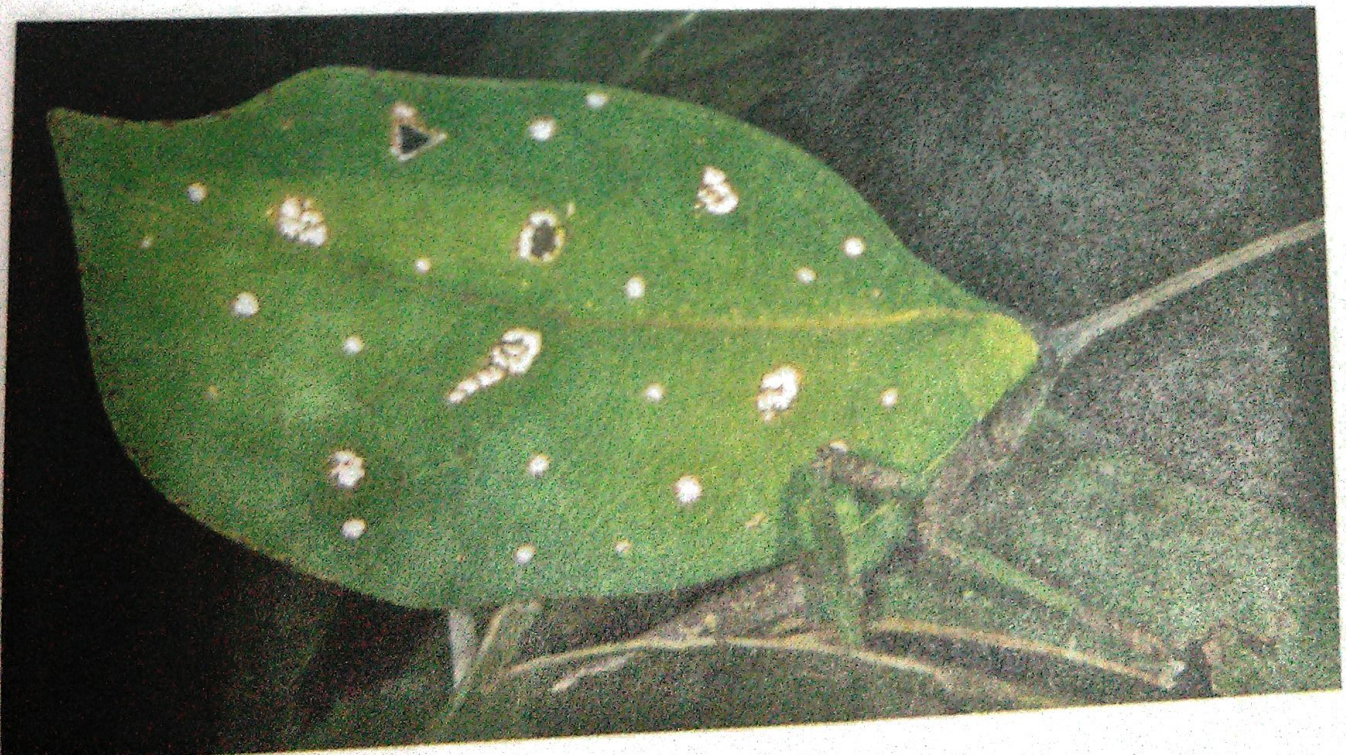
Most live in treetops, or among the leaf litter on forest floors. They enhance their disguises by deliberately assuming positions that merge with their surroundings.

Whilst some species can resemble bark, rock or lichen, those that resemble leaves are by far the most common.

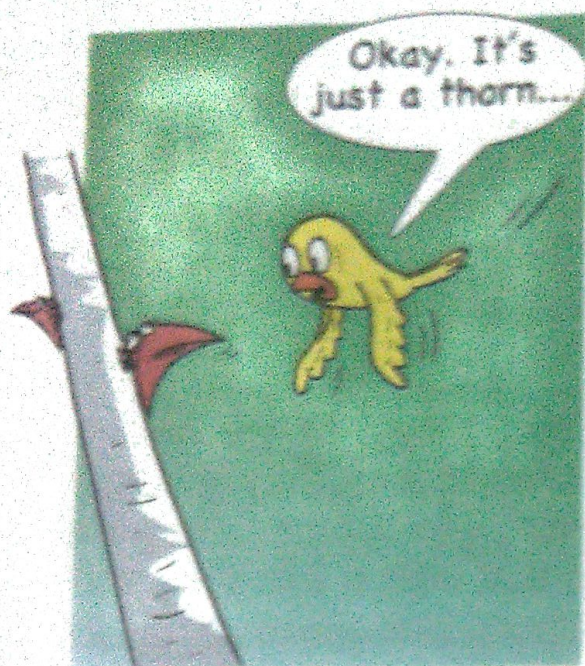
No two katydids are exactly alike. Some may look dead, some discoloured, and some even look partially eaten!

---

*Leaf Katydid*







## How do thorn bugs disguise themselves?

**T**horn bugs are very interesting insects. They are related to leafhoppers and cicadas. They have a horn-like pronotum or helmet, which is shaped to resemble the thorns on the branch of a tree.

This projection or thorn helps them to look like a part of the plant they're resting on. Their appearance also discourages predators of both the bugs and the plant from taking a bite, in fear of getting pierced.

The bugs pierce the stem



*Thorn Bug*

of the plant that they are resting on, and feed on the sap. The excess sap becomes honeydew, which attracts ants. Thorn bugs have fascinated naturalists for a long time because of their unusual shape.





## We Are Unique

A seahorse doesn't have teeth and they don't have a stomach. Seahorse have to eat constantly due to the fast process of digestion.



*Seahorse*

### Why are seahorses amazing?

**S**eahorses are really amazing creatures. They belong to the same class of fish as salmon and tuna, but they are very different in appearance.

Seahorses have heads that resemble

those of horses, and they even have pouches like kangaroos!

Seahorses are masters of camouflage. They can change colour, and grow skin filaments to blend in with their surroundings. Sometimes, the camouflage is so effective that they cannot be seen at all among the coral reefs in which many species make their home.

Interestingly, colour changes also help seahorses communicate emotions and intentions, especially during courtship.





## Arctic Foxes

Arctic foxes live in underground dens which can be centuries old, used by numerous generations of foxes. These tunnel systems have up to 150 entrances.

### Why does the Arctic fox change its colour?

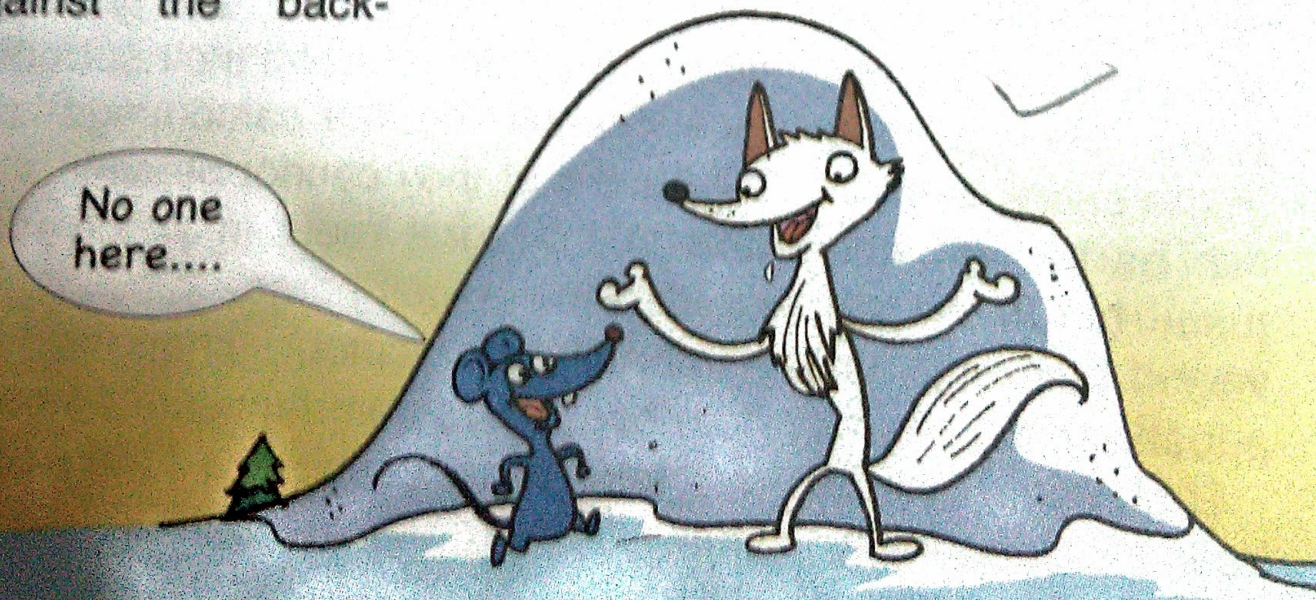
**T**he Arctic fox is a small white fox that lives in the Arctic regions of the Northern Hemisphere.

Here, the landscape is covered with snow in winter, and the fox's fur is snowy white too. This makes it almost invisible against the back-

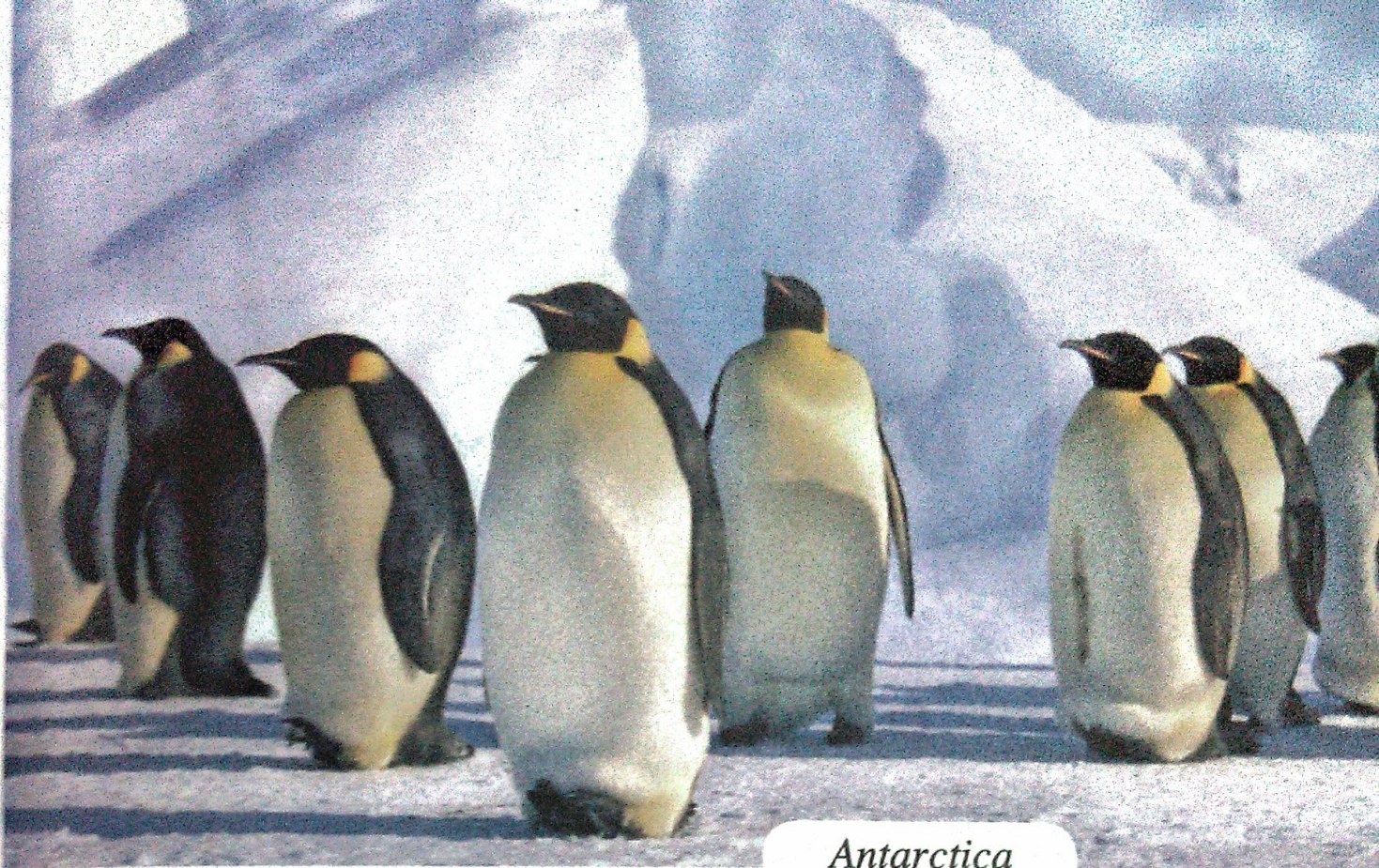
ground, so that the rodents and hares that it hunts will not be able to see it as it creeps up on them.

The arctic fox also steals half eaten fish caught by polar bears, and wants to do so without being seen by them either. The white fur is a useful disguise for this purpose too.

As the snow melts, and the days become warmer, the Arctic fox will shed its white coat, and grow a new one of brown to blend in with the colours of summer.







*Antarctica*

### **Why do many animals living in Antarctica not change colour in winter?**

**A**n interesting fact is that while most animals living in the snowy Arctic North are white in colour, or grow white coats in winter, many animals inhabiting the equally icy Antarctica do not change their colour.

The main reason is that during Arctic summers, much of the snow melts in most areas, and the landscape changes colour from white to brown or green. So, the animals living

there shed their coats to change their colours accordingly.

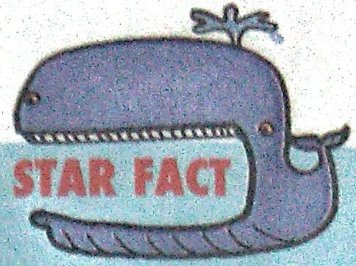
Antarctica on the other hand, remains covered with ice and snow all year long. Consequently, the animals living in Antarctica have permanent coats that they do not need to shed.

There are no large land animals in Antarctica that need camouflage as they sneak up on their prey. The smaller animals do not need to camouflage themselves against large predators either.





*Snow Leopard*



### STAR FACT

#### Long Tail

The tail of the snow leopard is big, and is unlike those of other wild cats.

### Why are snow leopards called 'ghosts of the mountain'?

**S**now leopards live mainly on the steep snow covered slopes of mountains.

They have beautiful thick white fur, with ringed spots of black or brown that act as an excellent camouflage.

I thought there's a leopard here!



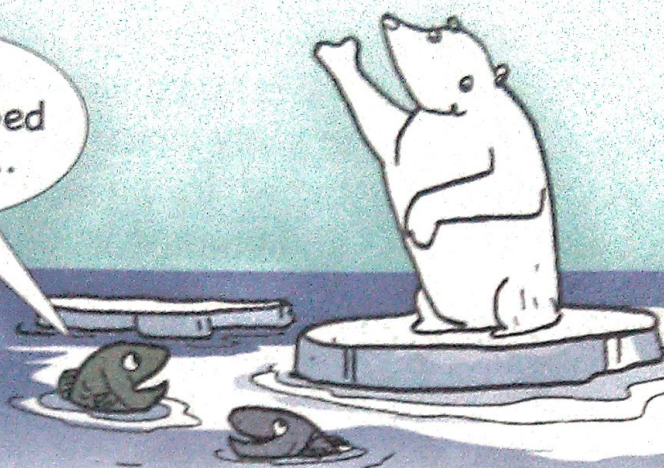
Snow leopards are extremely secretive and elusive by nature. They live and travel in solitude over vast distances of isolated and rugged mountain ranges.

Interestingly, snow leopards cannot roar, although they are big cats like the lion and tiger.

They are called 'ghosts of the mountain', for they are seldom seen, and even if spotted, they disappear almost at once like a ghost.



Look! A  
bear shaped  
iceberg...



### Why is the polar bear good at camouflage?

**P**olar bears are covered with beautiful white fur. They live their entire lives amidst the ice

and snow of the Arctic region, and their white fur helps them to blend in with their surroundings.

They can sneak up on an unsuspecting prey without

*Polar Bear*





being seen, and this makes them cunning, as well as mighty hunters.

The polar bear's fur provides excellent insulation from the cold, even when it is swimming in the Arctic Ocean.

### *Ptarmigan*



#### **STAR FACT**

### **Warming Poles**

The main threat to polar bears does not come from predators, but from global warming.

### **How does the ptarmigan camouflage itself?**

**T**he ptarmigan is a bird found in Alaska, Canada, and Greenland.

In summer, its feathers are brown and mottled. This brownish coat is an excellent camouflage.

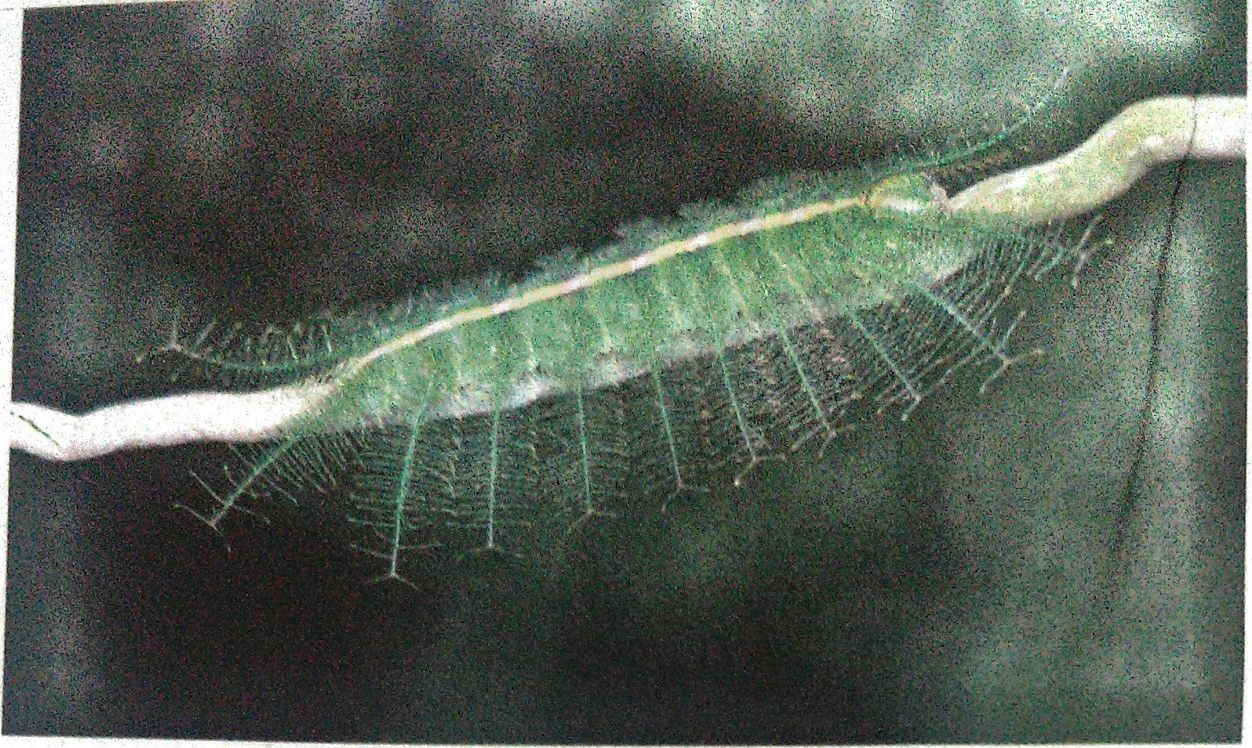


The ptarmigan spends its winters further north than most birds. The places it lives in are blanketed in snow during the winter months.

A brown coloured bird would be an easy target for other birds and animals hunting for food. So, the ptarmigan shed its brown coat, and grows a brilliant white one. It is now almost invisible against the sparkling snow.

When spring comes, the ptarmigan changes its coat again into a patchy half brown and half white. This springtime coat helps camouflage the ptarmigan into the changing landscape.





### Why is the common baron caterpillar fascinating?

**Y**ou know that caterpillars turn into butterflies, and the caterpillar of the common baron butterfly is a fascinating creature.

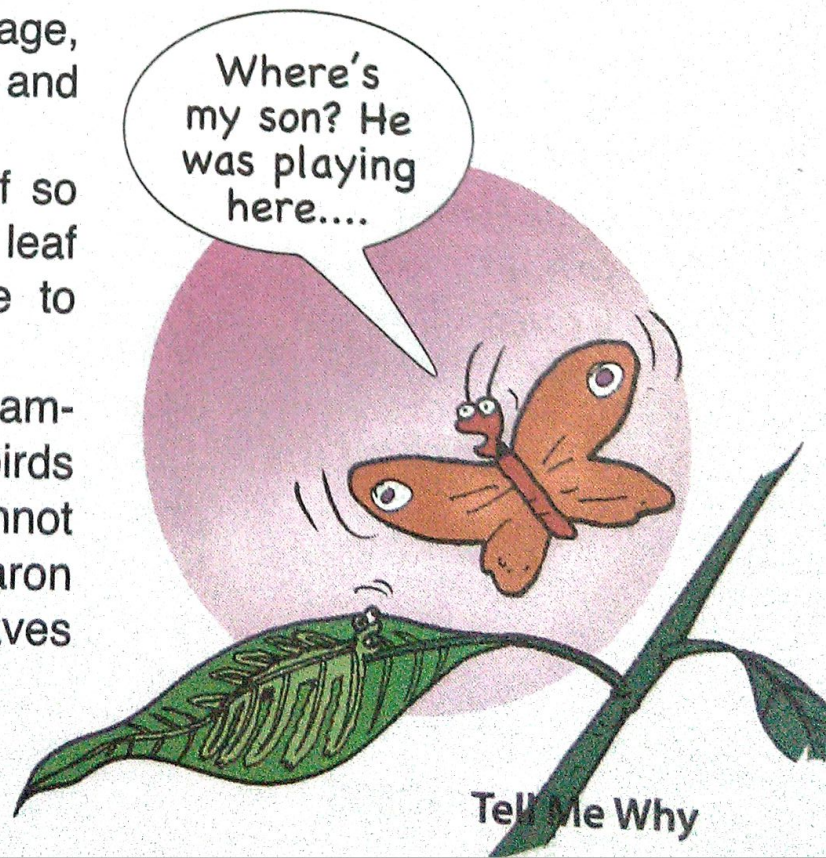
This butterfly is found in India, and its neighbouring countries. While it is in the caterpillar stage, it feeds mainly on mango and cashew leaves.

The caterpillar aligns itself so perfectly with the veins of a leaf that it is almost impossible to spot from a distance.

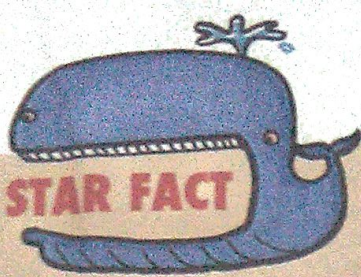
In fact, the tiny creature camouflages itself so well that birds who feed on caterpillars cannot distinguish the common baron caterpillar from the green leaves around it.

### *Common Baron Caterpillar*

This increases the caterpillar's chances of survival. Once the caterpillars emerge as butterflies though, they lose their camouflaging ability.







## **Bad Luck Potoo**

Some people believe that the voice of the great potoo, is a sign of bad luck or impending death.

*Great Potoo*

## **What makes the great potoo so special?**

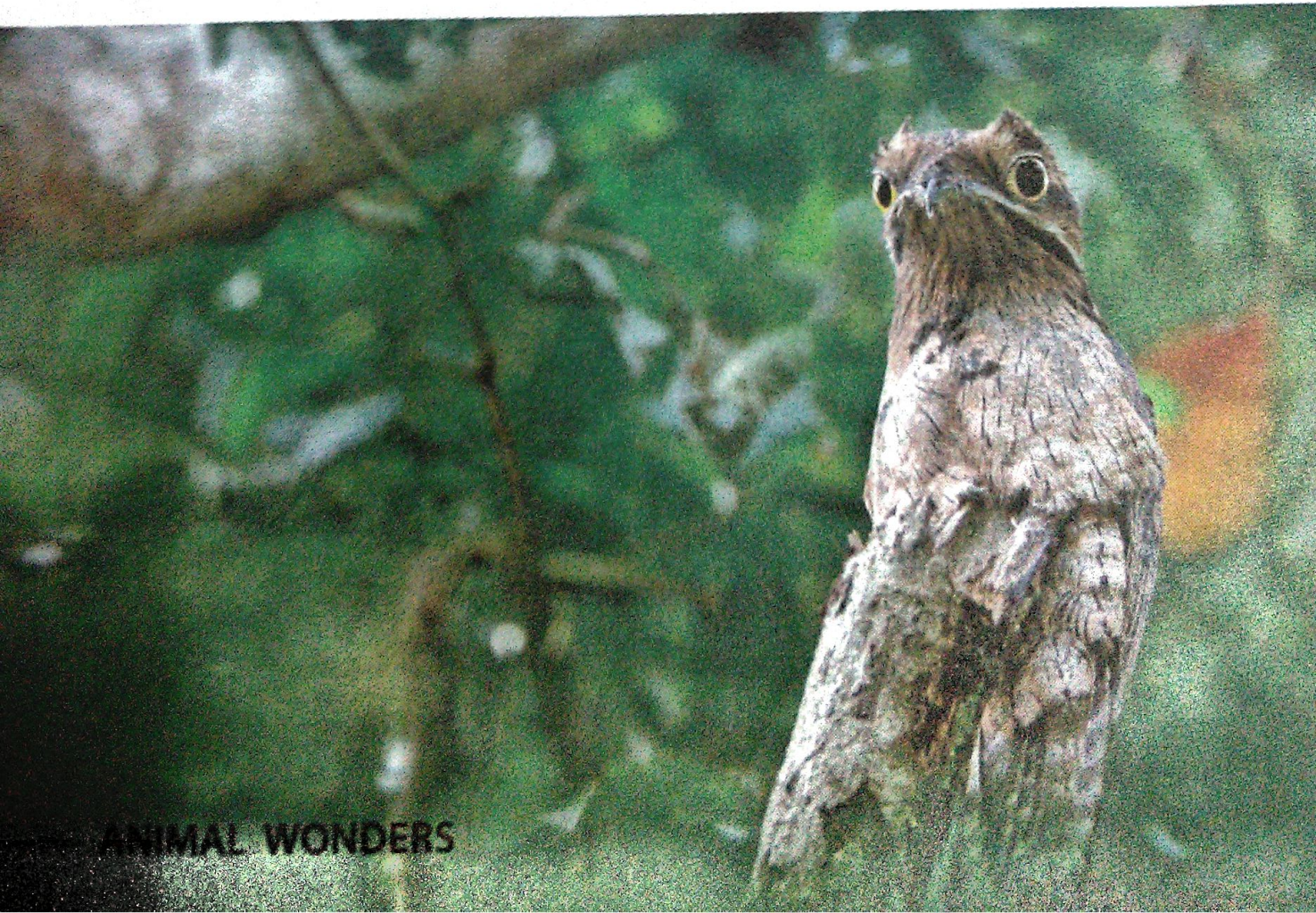
**T**he great potoo is a grayish brown bird that is larger than a crow.

It is found in America, and feeds on large flying insects. It sits and waits for its prey on the stump of a tree, and keeps perfectly still so as not to be noticed.

The great potoo's plumage is finely patterned in black and buff, and when it is motionless, it resembles the stump of the tree that it is perched on.

When the bird spots a prey, it will dart out and catch it swiftly, and then return to its perch to wait for its next victim.

This large bird has bright orange eyes which are the only way to spot this species at night, as its plumage is designed perfectly for camouflage.







### Why is the flounder considered a camouflage expert?

**F**lounders are a type of flat fish that are found hiding on the ocean floor.

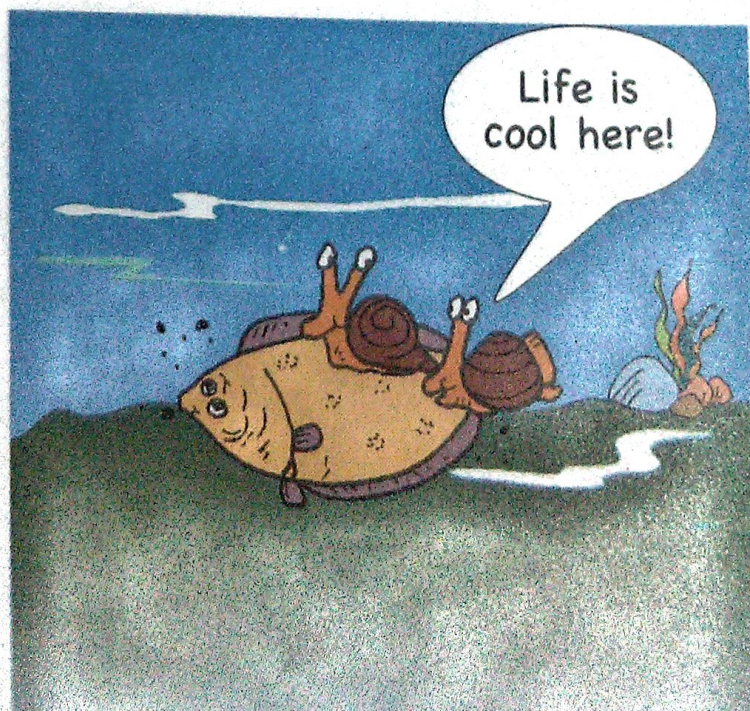
There are five different types of flounders, and they are experts at camouflage. Flounders have thin bodies, and their scales are so patterned that they look like the seabed.

Their prey includes marine animals that inhabit the seabed, like small fish, shrimp and crabs. The floun-

### *Flounder*

der hides under a thin layer of sand with only its eyes peeking out.

When a prey comes within range, the flounder will strike quickly. The flounder's camouflage is so effective that its victim had no idea of impending danger. Flounders are found at depths that vary from shallow coral reefs, to the deepest ocean trenches.







*Wolf Spider*

among which it waits for an unwary victim.

The spider then attacks, and kills the prey by injecting venom into it. They have the amazing ability to switch body colour over the course of days, depending on the flowers in which they lurk.

These spiders are generally found on yellow or white flowers, so they change their colour from yellow to white, as the need arises.

The colour change is quite slow. It can take nearly a month for the spider to change from white to yellow, but it only takes about a week to go from yellow to white.

### **How do wolf spiders camouflage themselves?**

**W**olf spiders are a large family of spiders, most of which are large, dark-coloured, and athletic.

Unlike most spiders, that catch their prey in webs, wolf spiders hunt down their prey. They live under rocks, logs and leaves, and dig tunnels into the ground. They either actively stalk their prey, pursuing them at high speeds, or they lie in wait in their tunnels, ready to pounce.

Wolf spiders are brown, grey, or black, and have dark markings on their bodies, usually stripes. Their bodies and legs are covered with bristly hairs. These camouflage





### *Stick Insect*

colours enable the spiders to surprise their prey while hunting, and to hide from predators who want to eat them.

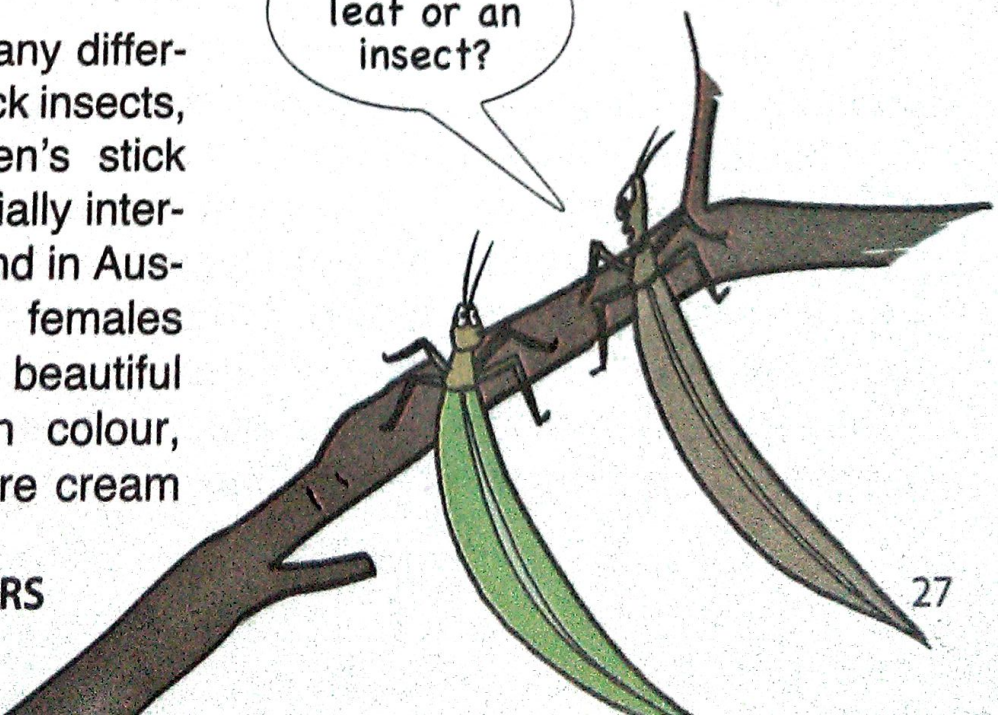
### **What is so interesting about the children's stick insect?**

**T**here are many different types of stick insects, but the children's stick insect is especially interesting. It is found in Australia, and the females are usually a beautiful apple green in colour, though some are cream

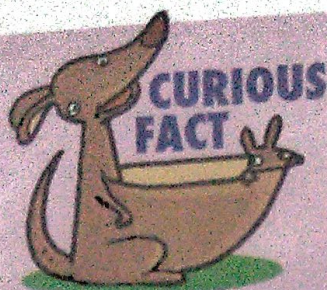
as well. The males are reddish brown, and very slender. These stick insects usually live in eucalyptus trees as their main source of food is the leaves of this tree.

To prevent being eaten by bigger insects, the young ones, have a long yellow stripe that runs down the centre of their bodies, which exactly

Are you a  
leaf or an  
insect?







## Old Frogmouth

The frogmouth was first described in 1801 by English naturalist John Latham.

matches the shape and colour of the vein that runs down the centre of a gum leaf.

In fact, an adult looks so much like a leaf, that it fools even other stick insects!

### How does the frogmouth disguise itself?

**A** frogmouth is not a frog, but a bird. Although they are related to owls, frogmouths are quite different from them.

They are poor fliers, and don't go hunting for food like other birds. Instead, they sit perfectly still on trees, and wait for their prey to come to them!

They are masters of camouflage, and dur-

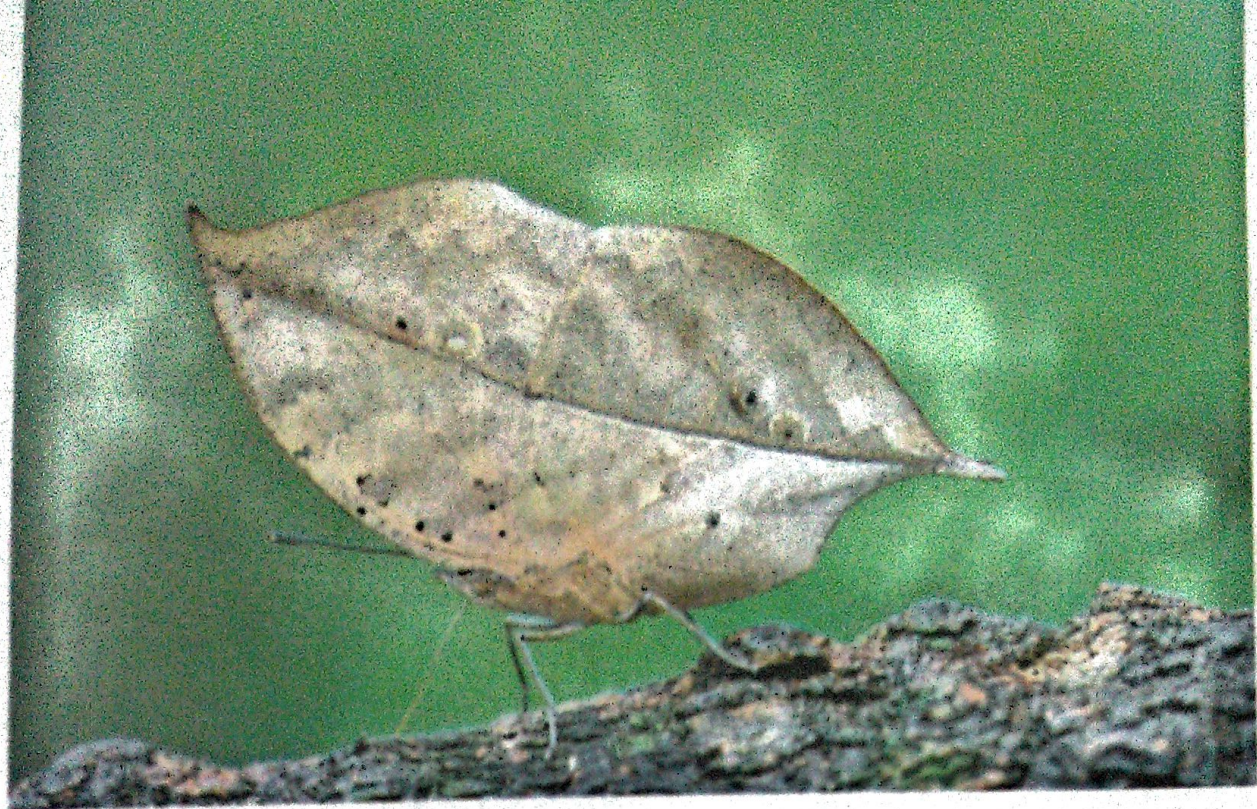


*Frogmouth*

ing daytime, they sit motionless on the branch of a tree with their eyes closed. If they suspect danger, they simply close their eyes, tilt back their heads, and blend into the bark.

The tawny frogmouth has a silvery-grey plumage streaked with black and brown. Its coat is mottled, with flecks of rusty brown and white, and the overall effect is that it looks exactly like the bark of the tree it is sitting on.





### *Dead Leaf Butterfly*

#### **How does the dead leaf butterfly escape from its enemies?**

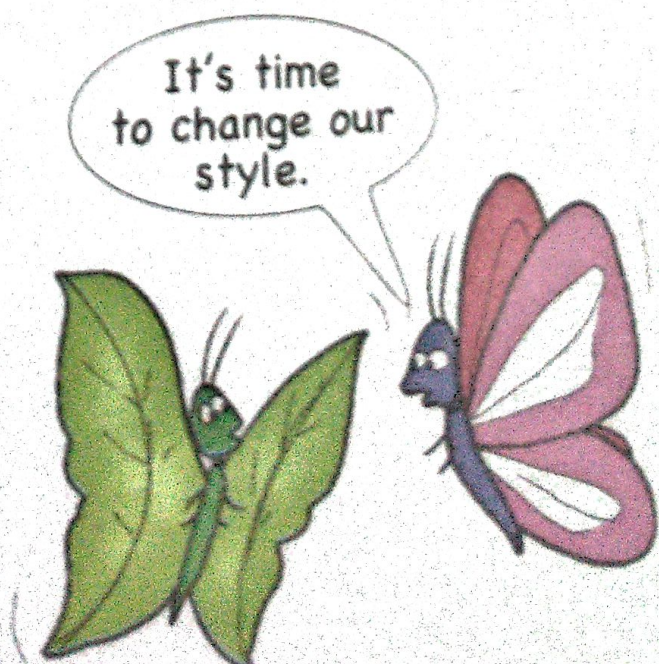
**T**he dead leaf butterfly is found in the tropical regions of Asia, mainly in India. Its wings are brilliantly coloured on top, in blue, and orange.

However, underneath, the wings are a dull brown, and have thick veins.

In fact, when folded, the wings look exactly like a dead leaf. This butterfly doesn't flit from

flower to flower like other butterflies. When it finds a tasty morsel, it will settle there, until it is time to find another source of food.

With its wings in the folded position, its enemies don't even realize that a butterfly is sitting there. Sometimes, it will hang upside down from a branch, and look like a dead leaf that is about to drop from the tree.





### Why is Peringuey's viper special?

**P**eringuey's viper is a small snake that is poisonous. It is especially fond of coastal sand dunes where it blends in completely with its surroundings. This viper buries itself just beneath the surface of the sand, with only its eyes and the tip of its tail exposed, as it waits to ambush its prey.

It has an orange brown or greyish yellow colouration, three rows of pale spots along its body, and a black tipped tail, all of which provide the perfect camouflage in the hot loose sand.

There is a theory that Peringuey's viper was once a dark scaled snake that evolved to

become an orange brownish one to blend into the sand on the Namibian West Coast.

Such adaptation is essential for animals to survive and to eat, instead of being eaten.

### Why does the scarlet king snake mimic a coral snake?

**T**he scarlet king snake is a small king snake that is seldom found in the open, except at night after heavy rains.

It is found under logs, mostly in pine forests. It is a non-poisonous snake. Its skin has a red, black, and white pattern with yellow bands.

To avoid being eaten by predators like black bears,

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*Peringuey's Viper*







*Scarlet King Snake*

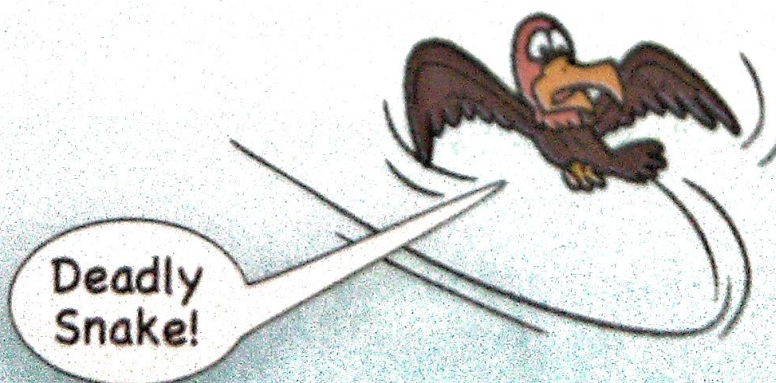
bobcats, and hawks, the scarlet king snake mimics the vivid stripes of the deadly, venomous coral snake.

Coral snakes also have red and yellow bands. They are extremely poisonous, and so, many animals avoid them altogether. On the other hand, the scarlet king snake, being relatively harmless, faces the risk of being attacked and eaten by other animals. So, it cleverly pretends to be a coral snake, and actually succeeds in fooling most of its enemies.



## Cow Snake

Milksnakes get their name from an old belief that they drink milk from cows. This belief probably arose because milk snakes were commonly seen in cowsheds.







*Chameleon*

### **Why do chameleons change colour?**

**I**f you are patient and watch a chameleon for some time, you may be lucky enough to see it changing colours.

Different chameleon species are able to change their colours. Many people believe chameleons change colours to disguise themselves, and hide from predators. However, chameleons are very fast, and can avoid most predators quite easily.

So, camouflage is only one of the reasons why chameleons change colour. Scientists believe that chameleons change colour to reflect their moods. By doing so, they send signals to other chameleons. For example, darker colours tend to mean a chameleon is angry. Some chameleons also change colours to help their bodies adjust to changes in temperature or light.

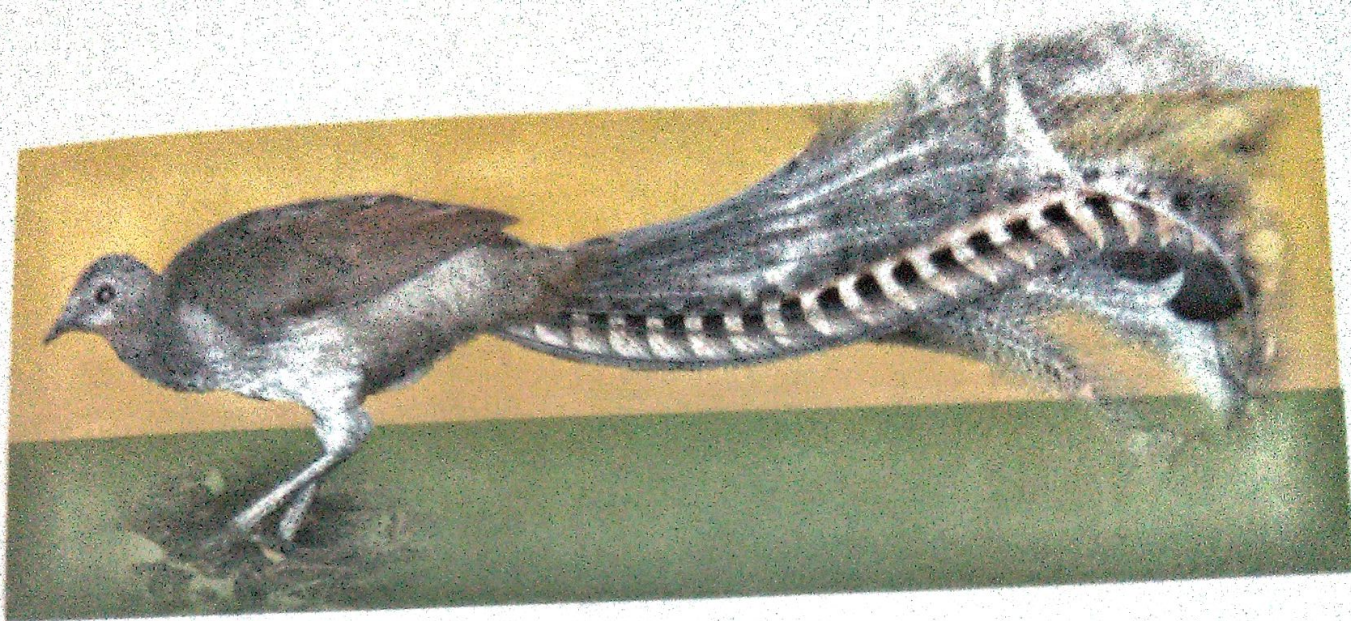
Whatever the reason, the sight of a chameleon changing colour is truly fascinating.



### **A Great Mimic**

The superb lyrebird has been known to reproduce the noise of laser guns, crying babies and camera shutters.





### *Superb Lyrebird*

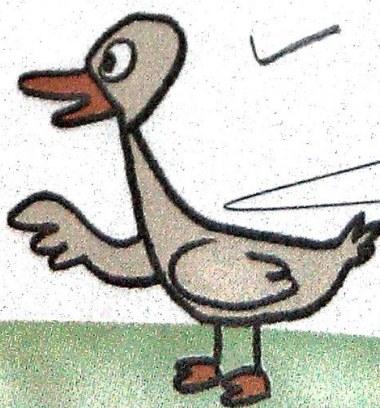
#### **Why is the superb lyrebird considered a superb mimic?**

**T**he superb lyrebird is an Australian songbird. It gets its name from its spectacular tail of fanned feathers.

The superb lyrebird doesn't just sing...it is a superb mimic too. These birds sing throughout the year.

They have an amazing ability to imitate almost any sound that they hear. Mixed in with their own calls, clicks, and song, you will usually hear them mimicking loud clear sounds made by other birds and mammals - including humans.

They have been heard to mimic the sounds of chainsaws, horns, and even trains! Superb lyrebirds are not trying to fool other creatures when they mimic sounds, they are just warning other lyrebirds to stay away from their territory.



Can you please sing a song with your lyre?



# Master Builders

A close-up photograph of a bird, possibly a weaver bird, building a cup-shaped nest. The nest is constructed from a dense, intricate mesh of dry grass and twigs, hanging from a branch. The bird is positioned at the bottom of the frame, facing the nest, with its head tilted upwards. The background is a soft-focus green, suggesting foliage.

Why are some animals considered master builders?

**A**nimals build, just as human beings do. They are talented architects who build a variety of structures, ranging from dams to cathedrals, to nests.

Birds build nests to protect their eggs, their babies, or themselves from danger. Animals build homes for protection from the elements, to store food, and to rear their young.

Sometimes, animals camouflage their homes so that predators will not spot their hideouts easily. Animals also build traps to catch other animals for food. Building is a means of communication for them as well.

Beavers, cathedral termites, weaver birds, paper wasps, and caddisfly larvae are just some of the most amazing architects of the animal world.



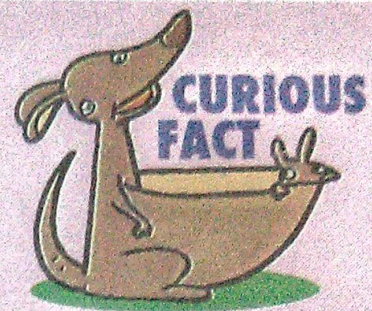


### Why are beavers considered to be excellent architects?

**B**uilding a dam is no easy task for humans, yet an animal called the beaver builds some of the most amazing dams in the world.

Beavers are large rodents. They are hard working little creatures who build dams across shallow streams so as to create a pond.

To construct a dam, they will cut down trees by gnawing through the trunk with their front teeth, and gather sticks and mud for building materials.



### Superb Teeth

The front teeth of the beaver never stop growing. The beavers' constant gnawing on wood helps to keep their teeth from growing too long.

The pond behind the dam provides the animals with food during winter, and also provides protection against predators.

Beavers also build canals to transport building materials. They stay in the lodges built by them within the dams. All these structures are constantly being added to, and maintained!





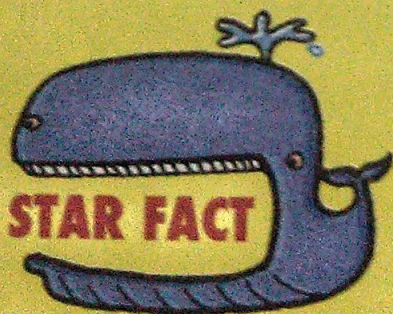
*Huge Termite Mounds*

### Why are Cathedral termites great builders?

In Australia's northwest you can see high mounds that look like cathedrals. They are the creations of a fabulous animal architect called the Cathedral termite.

These 'cathedrals' are created from mud and the saliva of termites. Each insect skyscraper is a mega city in itself, housing hundreds of termites.

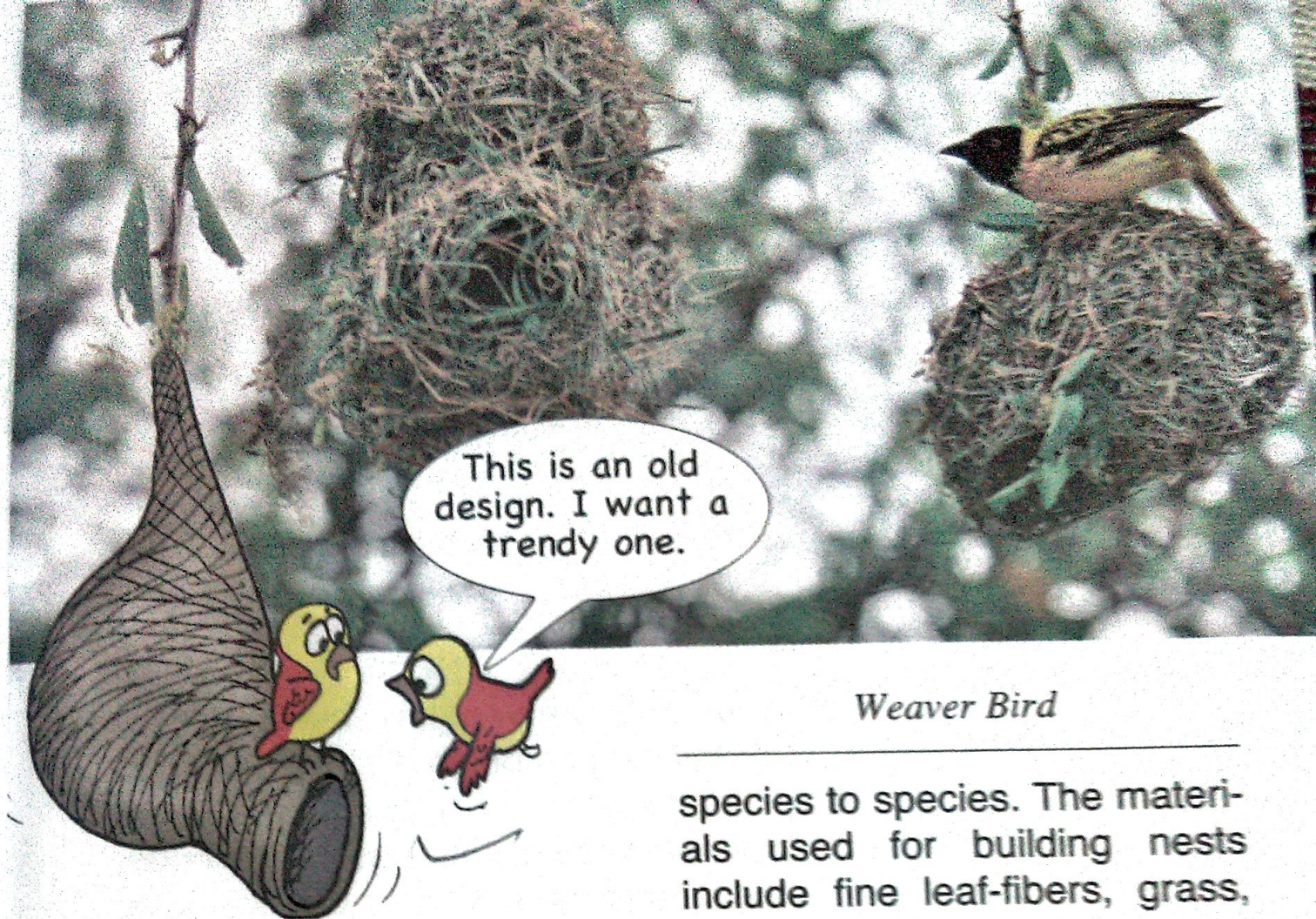
A mound can be spread out over several acres of land. The termites even maintain fungi gardens within the mound to feed the termite population residing inside. These spectacular mounds can last for hundreds of years!



### Largest Beaver Dam

The largest beaver dam is believed to be in Canada. Beavers may have taken at least 25 years to build it. This dam is 850 metres long.





### *Weaver Bird*

#### **Why do we say that weaver birds are great home builders?**

**W**eaver birds may not have studied architecture, but the homes they build are truly architectural marvels.

This bird is found all over the world, and the elaborately woven hanging nests that it builds, are a familiar sight.

The nests vary in size, shape, material used, and construction techniques from

species to species. The materials used for building nests include fine leaf-fibers, grass, and twigs. These are woven using different types of patterns and knots.

The nests have entrances on one side as well as a separate chamber where the bird lays its eggs. Some have a security system of sharp, spiky straw at the entrance for protection from predators.

The nests vary in size too. The largest looks like a haystack in a tree. Some nests can accommodate up to 400 birds, and may be occupied for a hundred years!





## Weaver Ants

### How do ants build their homes?

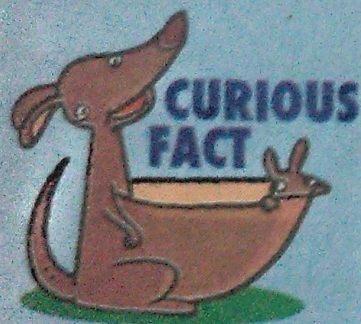
**A**n ant may be very tiny, but it is capable of building colonies that house a million members.

Some of these colonies are really huge. Some of them are underground, and have transit tunnels as well as trash pits, fungus gardens, and ventilation systems.

Weaver ants live in trees, and build nests from a type of silk they produce. They fold the large leaves by holding onto each other to create strong ant chains.

Wood ants create huge mounds on old tree stumps. They control temperature by opening and closing vents on the sides of the nests.

But, most amazing of all is a species of ants called fire ants. They build little boats, little houses, and even bridges by using their own bodies as the building material. They do this by linking their bodies together and forming strong networks.



### Predator Proof!

The nest of a weaver bird has a narrow entrance that opens upside down. It is not easy for a predator to get inside the nest.



What is unusual about the home of wasps?

A wasp is an insect similar to a bee. Most wasps build their nests using some form of plant fibre, along with mud and secretions from the wasps themselves.

Wood fibres are gathered from weathered wood, softened by chewing, and mixed with saliva. A suitable site is selected- like the branch of a tree, or even indoors- and the pulp is then spat out.

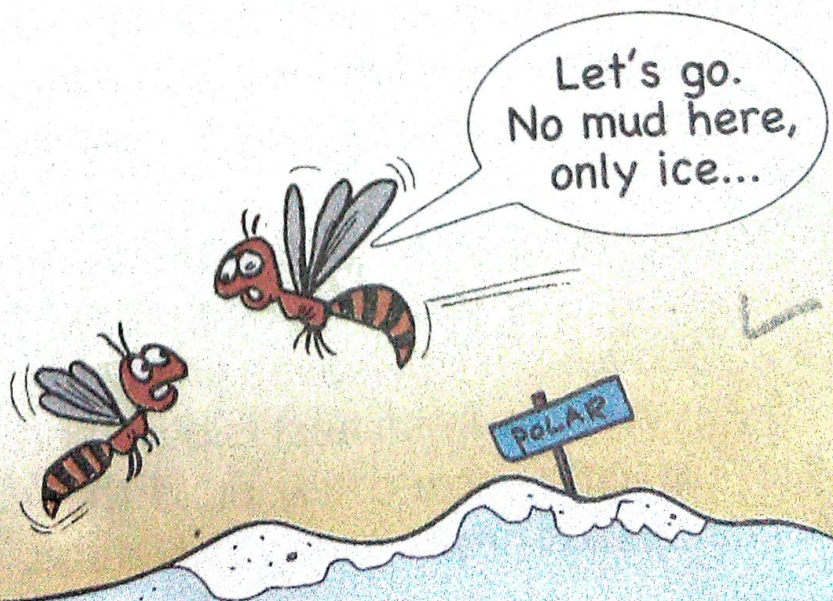
As the pulp dries, it will harden and gradually a six sided cell is built. Many such cells are joined together to form a nest. The nest is a water-resistant home, in which the queen wasp lays her eggs.



### *Wasps Building their Home*

Her first offsprings become worker wasps, and it is their duty to enlarge, and safeguard the nest. The queen continues to lay eggs, and the worker wasps look after the nest and the young ones.

Gradually, the nest grows into a colony, with more and more workers, and the colony itself grows bigger and bigger.







## Do gorillas and chimpanzees build houses?

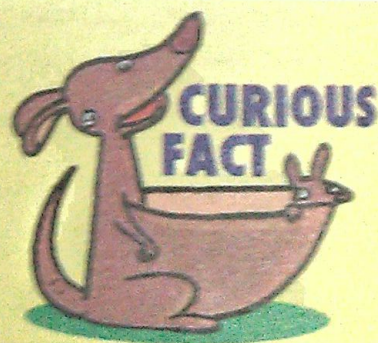
**C**himpanzees, orangutans, and gorillas do not build permanent houses. Instead, during the day, they build a rough nest on the ground, made of branches and leaves. Day nests are used for rest and play.

At night, they build elaborate nests on trees to sleep in. A chimpanzee will carefully choose a firm and stable tree branch in the forest canopy to build its nest.

These nests consist of a mattress, supported on a strong foundation, and lined above with soft leaves and twigs.

Every night, a fresh nest is built, and a single chimpanzee will build thousands of such nests during its lifetime.

## *Chimpanzee*



## Pillows and Mattresses

Orangutans make not only mattresses to sleep on, but also pillows and blankets, with leaves and branches.





*Swiftlet Building  
its Nest*

### What is unusual about the swiftlet's nest?

**T**he swiftlet is a small bird found in Southeast Asia. These birds build their nests in dark caves, high up on cliffs above

the sea. The nests are cup shaped, and the swiftlet uses its saliva, along with a few twigs and feathers, to build it.

Most of the time, building a nest can take several weeks. The nests of some species are considered to be a delicacy in some southeast Asian countries.

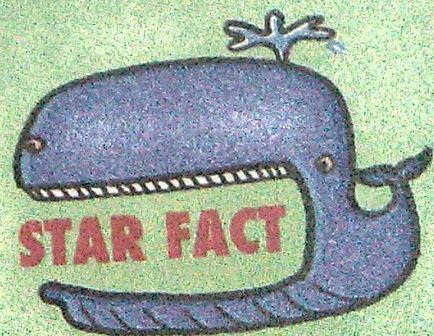
They are made into a soup and the clear gelatinous material that the bird uses to make its nest, gives the soup richness and texture. The soup is made by soaking and steaming the nests in water.

A cartoon illustration of a large, brown, wrinkled hand holding a white mug filled with blue bird's nest soup. The hand is positioned on the left side of the page, with the thumb and index finger gripping the handle. The mug has the letters 'TE' on it. A speech bubble originates from the hand, containing the text 'I bought a ready-to-live apartment...'.

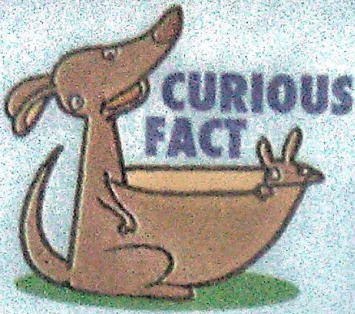
I bought a  
ready-to-live  
apartment...

### **Yummy!**

Bird's nest soup was invented around 1750, by a Chinese man named Hao Yieng based at Siam.







## Good Relatives

Chimpanzees are our close relatives. Chimps and humans share about 98 per cent of their genes. Chimps normally live about sixty years.

How did the ovenbird get its name?

Ovenbirds are small songbirds found in America. They have small heads, thick bills and jaunty tails.

The ovenbird gets its name from the shape of its nest, which resembles an old-fashioned oven.

The nests are leaf covered domed structures. The female weaves the cup, side entrance, and roof of her domed nest from the inside as a single piece. Then she drops leaves and twigs on top to hide it.

The ovenbird builds a fresh nest every year. Since the old nest remains in good condition for two to three years, other birds like swallows occupy it.

*An Ovenbird and its Nest*







*Water Spider*

### Why does the water spider build a diving bell?

**T**he water spider lives entirely under water. It is the only species of spider to do so. It doesn't have gills to breathe like fish do.

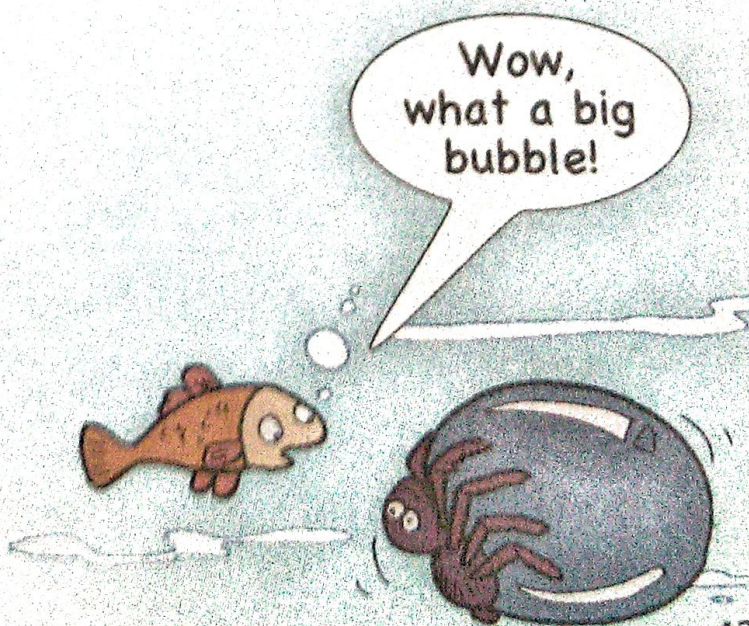
However, water spiders have a really neat way of breathing. An air bubble is trapped by a dense layer of hairs on its abdomen and legs, giving the abdomen a silvery appearance.



#### STAR FACT

### We are not Insects

Spiders are not insects. They belong to a family called arachnids. Other members of this family are scorpions and mites. Spiders have eight legs, while insects have six.





To stay under water for longer periods, the water spider builds a type of diving bell. So, it is also called a diving bell spider. It will spin the web on the water surface and collect air bubbles to fill it from underneath.

The spider pops up under its web and breathes when it needs to.

### **What is special about a prairie dog township?**

**A** prairie dog is a type of squirrel found in the grasslands of America. These animals live in burrows as family groups. Each group may have

as many as 100 burrows that are connected by a network of tunnels.

Many groups come together to form huge colonies called townships. These townships are very well organized.

Even, sentries are posted to warn the inhabitants when a predator approaches. Prairie dog townships are easily identified by the raised entrances to the burrows.

These raised entrances give the tiny prairie dogs some extra height when on sentry duty, so that they can see better and further.

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### *Prairie Dogs*







*Rainbow Parrot Fish among Corals*

### **Why do rainbow parrot fish make sleeping bags?**

**R**ainbow parrot fish are beautifully coloured fish with deep green bodies.

These fish are found on coral reefs. They get their name from their teeth, which are fused together to form a parrot-like beak.

This beak is used to scrape algae and other

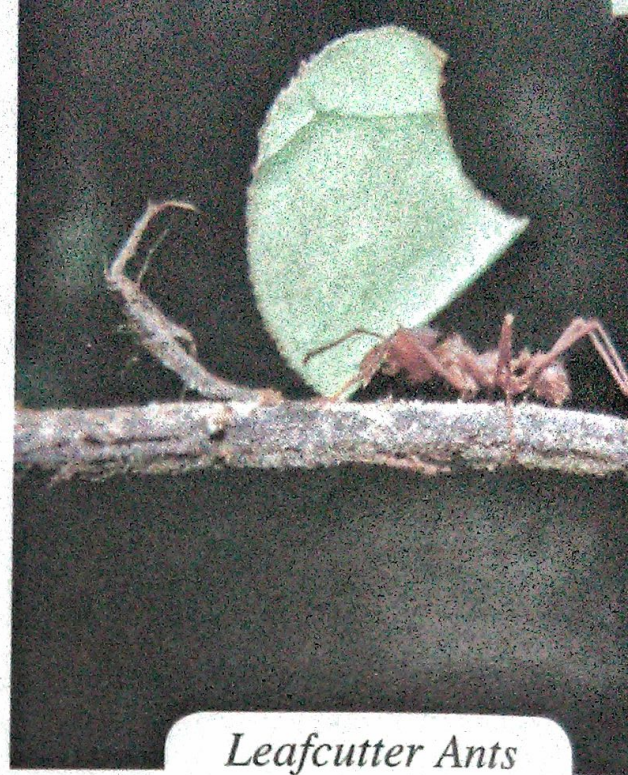




## Why are leafcutter ants called gardeners?

**L**eafcutter ants live in huge colonies. They build nests that are mounds of mud, dotted with hundreds of tiny entrances.

The nest itself is a maze of chambers and tunnels. What is truly amazing are the fungi gardens that are cultivated by these ants inside some of the chambers.



*Leafcutter Ants*

organic matter from the surface of the coral.

At night, rainbow parrot fish retreat into the crevices found in the reef. They then cover their bodies with a sleeping bag of slimy bubbles, made from the mucus that the fish belches out.

Wrapped in this sleeping bag, the fish can sleep in peace, without fear of being attacked by predators that are attracted by its bright colours.

## Why are trapdoor spiders unique?

**S**piders usually live in webs, but the trapdoor spider is different. It lives in a burrow.

Different species of trapdoor spiders have different types of burrows. Some of these burrows are simple and tube shaped. Others are more elaborate. The burrows are made with soil, vegetation, and a type of silk produced by







The ants cut leaves, and gather them for the fungus to grow on. The leaves are fertilized with fluids from their bodies.

The adult ants feed on the fungus. These tiny creatures devote their lives to maintain these gardens.

They even weed out any unhealthy fungus, just as dedicated gardeners weed out unwanted plants.



*Trapdoor Spider*

the spiders. All burrows have one thing in common - they are very well hidden.

Their entrance is a trapdoor which is almost invisible unless you know where to look. Female trapdoor spiders raise their babies in these burrows. They come out of the burrow only at night. They lift the trap-

door slightly, grab a passing prey, and drag it back into the burrow to be eaten at leisure.

Baby spiders remain for several months in the mother's burrow.

Each time the spider grows bigger, it has to widen its burrow, and add another rim to the trapdoor.





### STAR FACT

## One Time Sting

Bees are able to sting only once, because the stinger of the bee remains in the victim's body.



*Close up of a Honey Comb*

## Why are honeycombs hexagonal?

**H**oneybees live, and store honey in honeycombs. Honeycombs are made of beeswax, which is produced by the bee.

However, to produce one ounce of beeswax, a bee has to drink eight ounces of honey. Therefore, when they are building a honeycomb, they want it to store as much

honey as possible, without wasting any space.

The maximum amount of honey can be stored in a cell that has six sides which is why every cell of the honeycomb is hexagonal, or six sided in shape.

What is amazing is how the bees are able to create a perfect hexagon every time.

Recent studies have shown that the cells actually start off as circles - moulded by the shape of the bee's body- and then flow into a hexagonal pattern seconds later!



## How did the tailorbird get its name?

**T**he tailorbird is a songbird found in Asia. Its nest is a wonder, created with all the skill of a master tailor, hence its name.

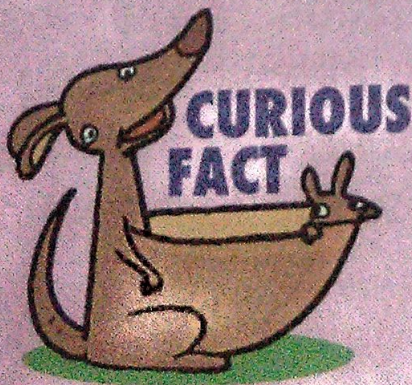
The tailorbird builds its nest on thorny trees. It will select a large leaf, and sew the edges together to make a cup shaped outer structure.

Sometimes, several smaller leaves are stitched together.

The stitch is made by piercing the leaf and drawing the fibre through the minute holes—just like a tailor stitches together two pieces of fabric.

The leaves will have their upper surfaces facing outwards, so that they remain well hidden among the other leaves of the tree.

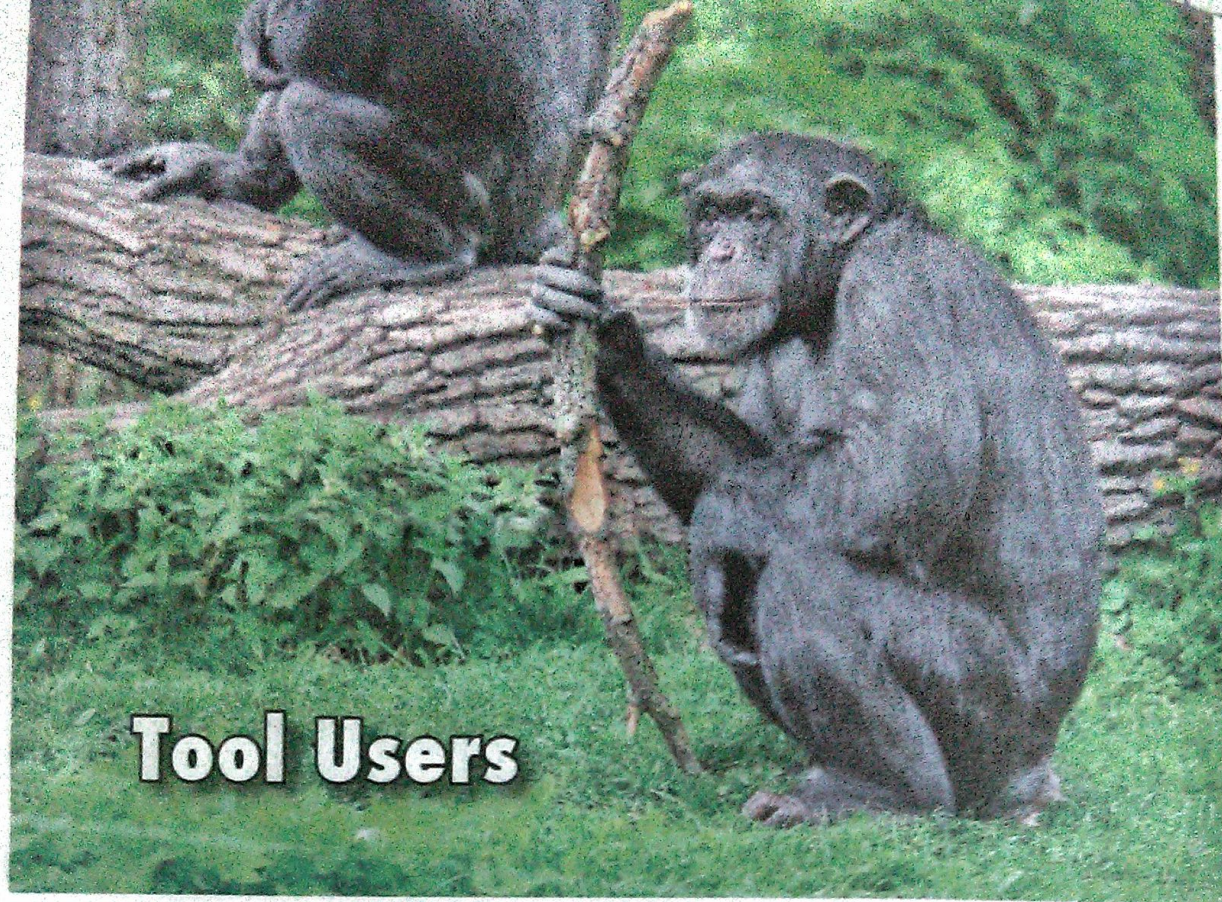
Next, the tailorbird makes the actual grass nest inside this cup shaped structure. This nest is then lined with soft materials, including cotton wool. As it hangs from a branch the nest looks like a cradle, which it is... a cradle designed for the tailorbird's eggs and babies.



## Tailor's Song

Common tailorbirds are good singers. They make calls which are much louder. Common Tailorbirds are active and restless; usually heard, rather than seen.





## Tool Users

### Do animals use tools?

**D**id you know that some animals use tools just like we do? Generally, tools are used to make any task easier, or to make a specific task possible.

Earlier it was thought that only human beings had the intelligence to make and use tools.

Scientists now realize that animals too, are intelligent enough both to make rough tools and to use them efficiently. Chimpanzees make stone hammers, orangutans make whistles, crows use twigs as

tools while elephants use branches as fly swats, to give a few examples. There are many other tool-using animals too like dolphins, sea otters, gorillas and the octopus.

### How do chimpanzees use tools?

**C**himpanzees have been using tools almost as long as man has been doing so. They not only use tools, they make them too.

Typical objects made into tools include stems, twigs, branches, leaves and rocks.

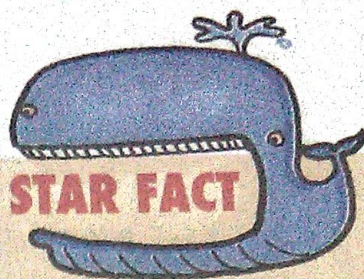


Chimpanzees use these objects for many purposes, including feeding, drinking, and cleaning themselves. Sometimes they even use these objects as weapons.

Even as long back as 5000 years ago, chimps were using stone hammers to crack open nuts. They use branches as a tool to get food. They first strip the leaves and twigs off a branch, which is then inserted into a termite mound.

As termites crawl up the stick, angry at being disturbed, the chimp will lick them off to enjoy a tasty meal. Chimpanzees also chew up leaves to make a kind of sponge. This 'sponge' is then used to soak up water for the chimp to drink.

They sharpen sticks to use as weapons. Female chimpanzees are better at making tools than males, and they teach their young ones how to make and use tools too.

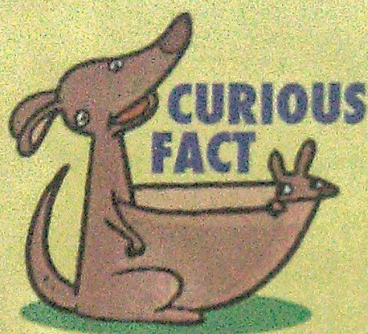


## Good work, Goodall

Jane Goodall was a famous scientist who studied the behaviour of chimpanzees, and discovered that they use tools. In 1960, she observed a chimpanzee that she named David Greybeard catch termites by using a blade of grass.

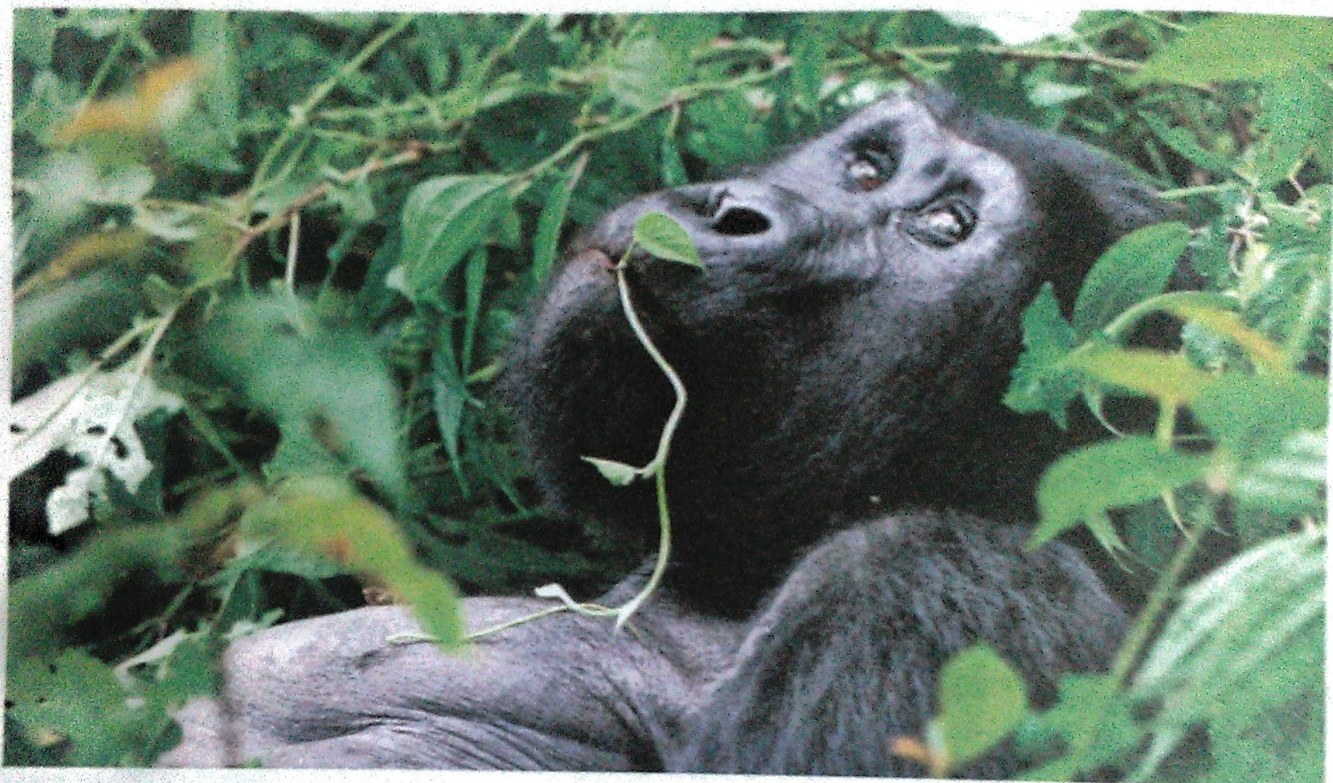






## More Tool Users

Baboons, mandrills, and crab eating macaques are quite familiar with the use of tools. Crab eating macaques use rocks to break the shells of crabs, nuts, and oysters.



*Gorilla*

### What tools do gorillas use?

**G**orillas are not as skillful with tools as chimpanzees are. They use mainly sticks as tools for different purposes.

Sticks are thrown into trees to knock down leaves and seeds. Gorillas may threaten each other with sticks too. They also use sticks as tools to test the depth of muddy water, and as a support in crossing swampy areas. Sometimes, they use tree trunks as bridges to cross swamps, and logs are used as ladders.

Actually, gorillas use tools very rarely in comparison with chimpanzees, for the simple reason that they can manage





quite well without tools. Their teeth are strong enough to break nuts, and they smash termite mounds with their bare hands.

### What is special about capuchin monkeys?

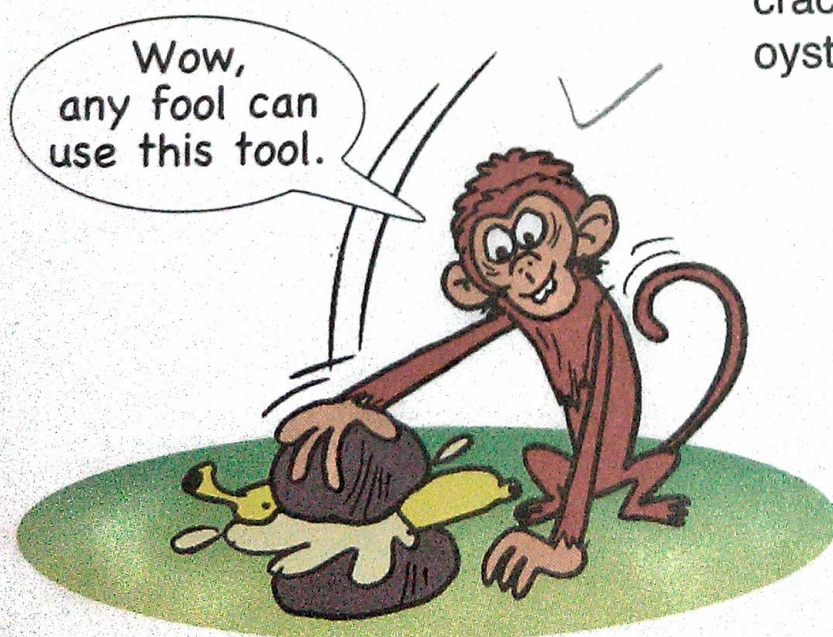
**C**himpanzees, gorillas, and orangutans are all apes belonging to the primate family.

### *Capuchin Monkeys*

Capuchin monkeys are special, because they are the first non ape primate to be observed using tools in the wild.

They place nuts on a stone, and hit them with another large stone to crack them. These monkeys even crack open hard fruits and oysters in this manner.

Capuchins also use stones as a tool to dig out tubers. Capuchin monkeys therefore, not only know how to use tools, but also how to use them intelligently and efficiently.







*Orangutan*

### Why are orangutans considered experts at using tools?

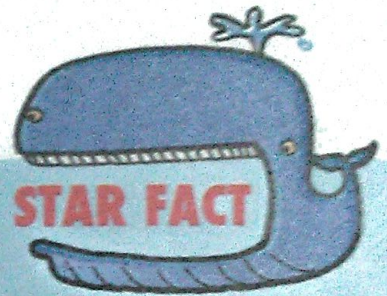
**O**rangutans use tools in a number of ways. They use sticks to dig in tree holes for termites, and to knock down fruits from trees.

They also use sticks to measure the depth of the water in a pond or swamp.

Orangutans use leaves as napkins to wipe their chins, and as gloves to handle spiny fruits.

Large leaves are used as umbrellas in a rainstorm. On the island of Kaja, a male orangutan was observed using a pole to acquire fish from a net after observing local men spear fishing.

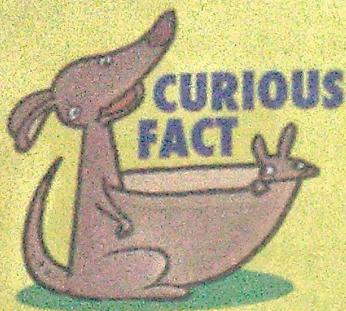
This shows how intelligent orangutans are, and how expert they are at using tools to make life easier for themselves.



### **Silverback**

An adult male gorilla is called a **silverback**, because of the distinctive silvery fur growing on their back. Each gorilla family has a silverback as leader!





## Man of Forest

The name 'orangutan' is derived from the Malay and Indonesian words orang meaning 'man' and hutan meaning 'forest', thus, 'man of the forest'.

### Do elephants use tools?

**E**lephants are quite remarkable in the way they make and use tools.

They hold the stem of a tree with their foot, and rip off branches from the side with their trunks.

Elephants use their trunks like we use our hands. They hold the branches in their trunks, and use them to swat flies, scratch themselves, or

even remove ticks from their front legs.

Elephants have also been observed digging a hole to drink water. They then chew bark so that it forms a sort of plug for the hole, which they cover with sand, to avoid the water from evaporating.

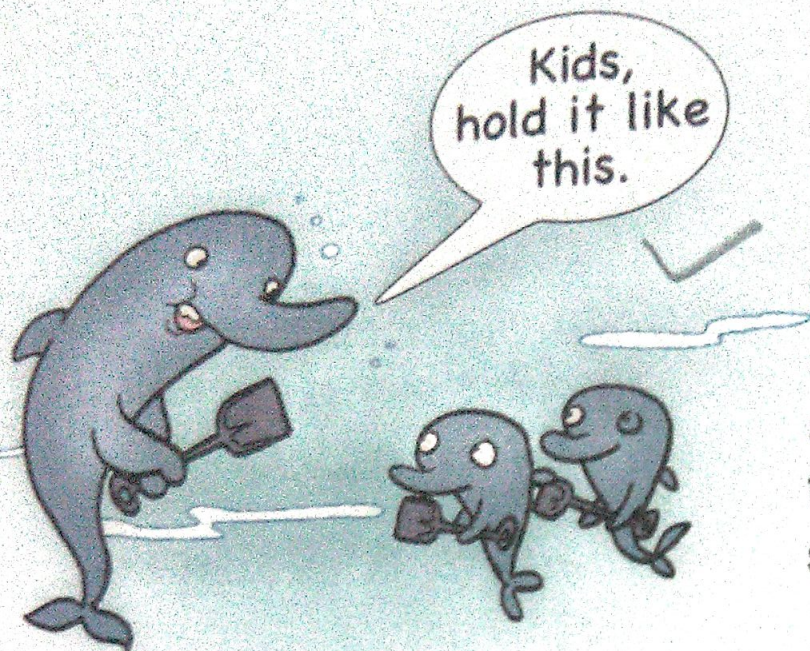
This is just one example of how smart elephants are!

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*Elephants*







### How do dolphins use tools?

**T**here is no doubt that dolphins are among the most intelligent of animals.

In Shark Bay, Australia, scientists have observed dolphins using tools to find food. These

dolphins tear off basket sponges from the sea floor, and cover their beaks with the sponges.

The sponges not only protect their beaks from cuts and scratches as they search the sea floor for food, but also help to uncover fish hiding in the sandy bottom of the ocean.

Dolphins may also use conch shells as tools. They use the shell to trap little fish, and then shake the catch into their mouths. An interesting observation is that mother dolphins teach daughter dolphins to use tools in this manner!

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*Dolphin*







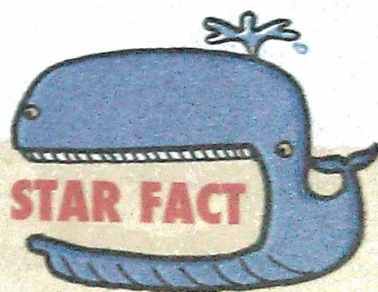
## What do sea otters use as tools?

*Sea Otter*

**S**ea otters use many types of tools. These include rocks, driftwood, and empty clamshells, all of which may be used to crack open the shells of prey such as clams.

To open hard shells, a sea otter may pound its prey with both paws against the rock which it places on its chest. In addition to rocks for opening shells, sea otters employ other kinds of tools, including kelp fronds.

They may wrap crabs in kelp fronds to hold them captive, until the sea otters get around to eating them. Sea otters also use kelp fronds as security blankets for themselves. Wrapped in a snug blanket of kelp, a sea otter can rest peacefully, knowing that it is safe from being carried away by ocean currents.



### **Super Strong!**

A sea otter's teeth are strong enough to bite through the spines of a sea urchin, or crunch a clam-shell open.





*Mongoose*

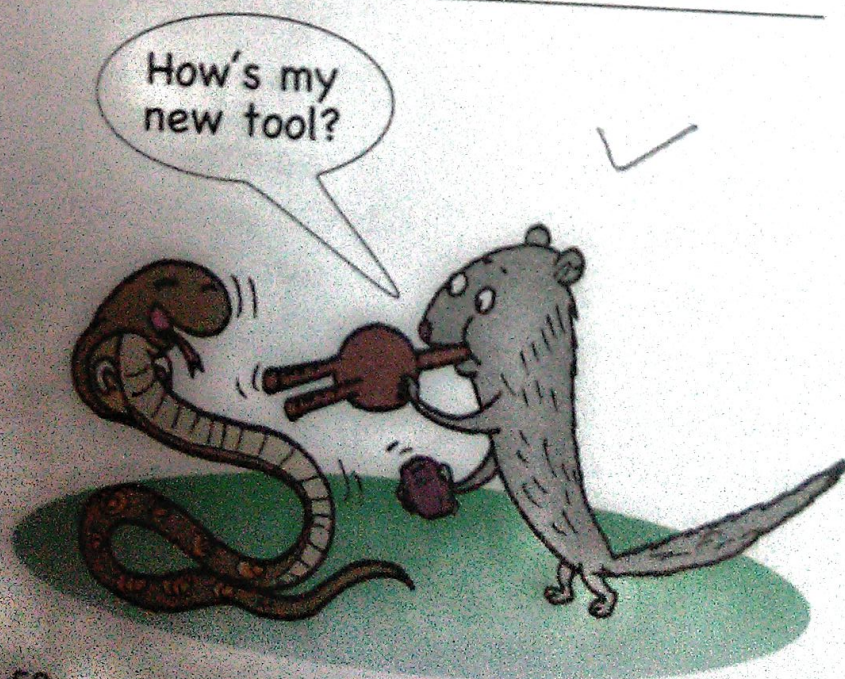
## Why are mongooses considered tool users?

**A** mongoose is a small animal found in Asia, Africa, Europe and the Caribbean.

It looks a bit like a cat with a fluffy tail, and lives in a burrow. Mongooses are very brave, although they are small, and they will attack and kill snakes much larger than them.

In fact, they appear to be almost immune to snake venom. Mongooses are very bright animals that have been observed using tools, especially rocks, that they use as anvils.

They routinely crack open eggs, nuts, or shelled creatures, like crabs, by dropping or throwing them on rocks. Some will rise up on their hind legs, holding the item in







*Octopus*

their forepaws, and drop it on a stone. Others have been observed hunched over, launching objects between their legs against a large stone or tree. This behaviour is observed and practiced by youngsters until perfected.

### **Do octopuses use tools?**

**O**ctopuses are weird looking, wonderful animals that live in the ocean. Unlike molluscs such as clams, octopuses don't

have a hard shell as protection from predators—so they need to be creative to survive.

Some of them change colours to blend into their surroundings with remarkable accuracy. Some octopuses shoot ink when threatened. Others build hard tent like structures for their protection. They do this by using coconut shells as building material.

They collect the coconut shell halves that people throw into the sea, and stack them into a pile. Next, the octopus will sit on top of the pile, cover it with its eight arms, and walk awkwardly across the ocean floor, moving the entire pile to a safe place.

When it has collected enough coconut shells, it will build the shelter that it needs. Now, isn't that really smart?



## Do birds use tools to catch their prey?

**B**irds are very intelligent, and many species use tools to catch their prey. The most popular tools used are twigs and thorns. Crows have been observed in the wild, using

Macaws know how to utilize rope to fetch items that would normally be difficult to reach. Striated herons and green herons go one step further.

They use insects, twigs, breadcrumbs, or bits of leaves as bait. They drop the



sticks with their beaks to extract insects from logs.

Crows aren't born knowing how to make these tools—they teach the technique to their young. They can improvise, too.

### *Macaws*

bait into the water, and wait. The bait acts as a lure, and when fish come to grab it, the heron will promptly catch the fish!





*Crow*

## How do crows use tools?

**M**any animals make and use tools, but crows are especially clever at making new tools, and finding new ways to use them.

They throw nuts in front of moving cars to crack them open, and whittle down sticks to pull out bugs from hard to reach places.

They are even intelligent enough to make hooks like human beings do, to fish for tasty bugs. Using its beak, a crow prepares a stick by stripping bark from one end. Then it tweaks the end into a small hook, catches the bug on the hook, and pulls it out.

The story about a thirsty crow that drops stones into a pitcher of water so as to raise the level of the water in order to have a drink may be just a fable, but crows are certainly intelligent enough to do this.

The story about the thirsty crow is a true story.





## Why are some species of vultures called stone throwers?

**V**ultures are good at using stones as tools. They are very fond of ostrich eggs that are really delicious.

Normally, an eggshell can be cracked by just pecking at it. However, ostrich eggs have shells so thick and hard that most birds- including vultures- cannot crack them open by just pecking.

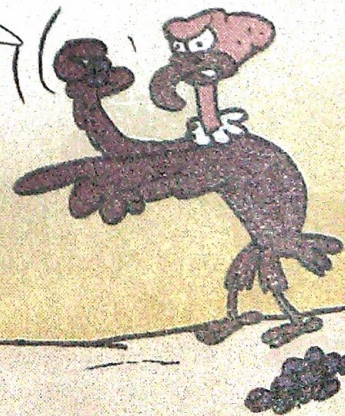
The Egyptian vulture however, is smart. It will select a rounded stone as a smashing tool. The vulture will search as far as 45 metres from the coveted egg to find the most suitable stone.

It then picks up the stone in its beak, and throws it at the egg. The stone is hurled again and again, until finally, the egg cracks open and the vulture can enjoy a feast.

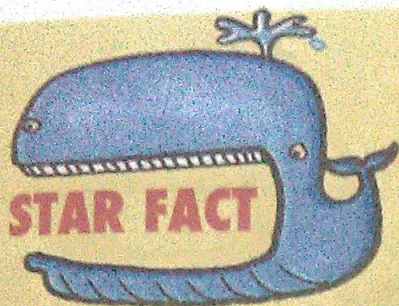


*Egyptian Vulture*

This time,  
I will break  
this shell.







## Carpenter Finch

The woodpecker finch has gained fame due to its capability of using a twig, stick, or cactus spine as a tool.

So, it has been nicknamed the carpenter finch.

## Why is the European red-backed shrike called 'the butcher bird'?

In a butcher shop, you see meat hanging from hooks. This practice is called impaling.

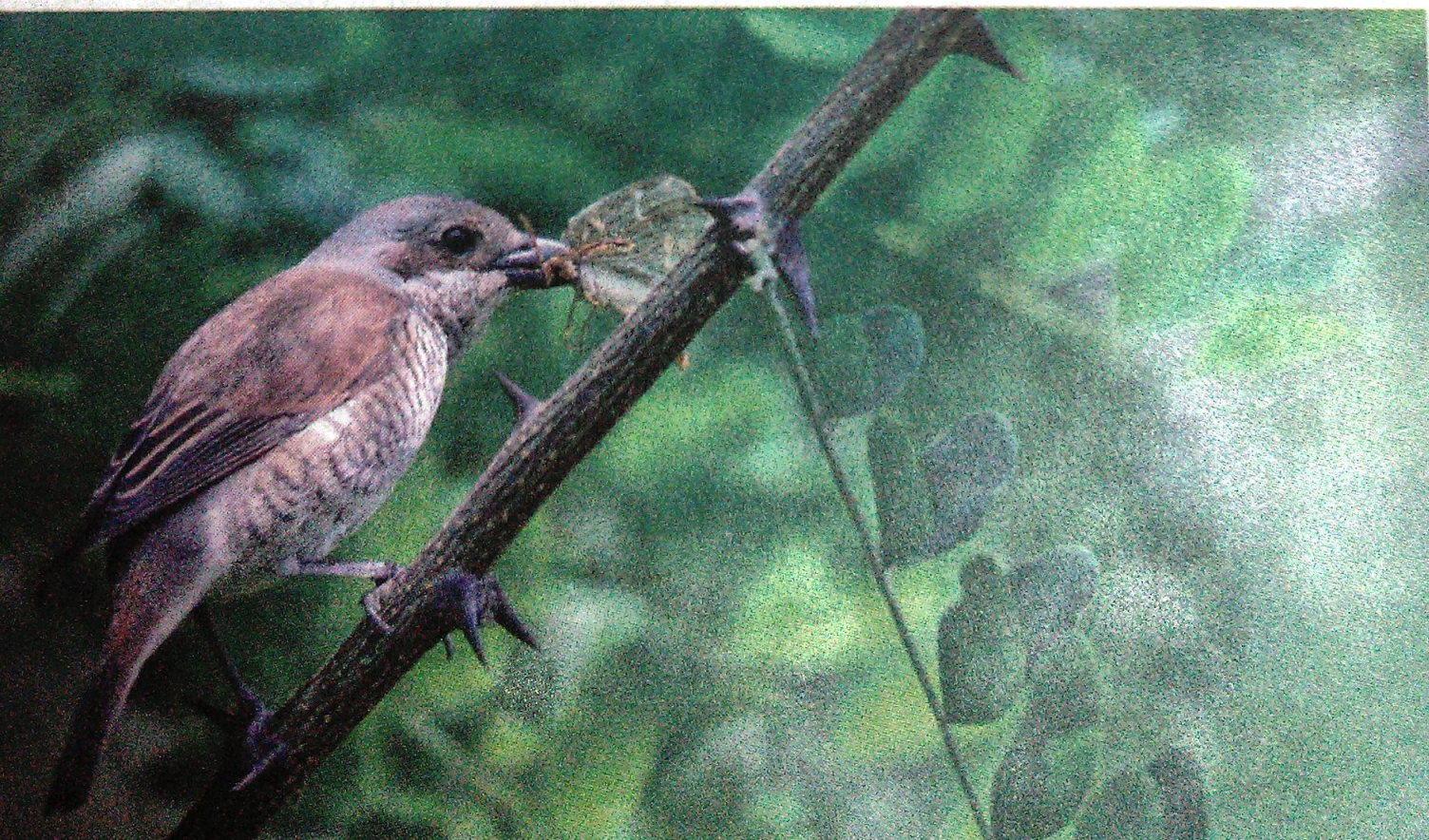
Curiously enough, there is also a small bird that impales the prey that it kills. It is the European red-

backed shrike. When hunting, shrikes sit in prominent positions such as on fence posts, in order to spot potential prey.

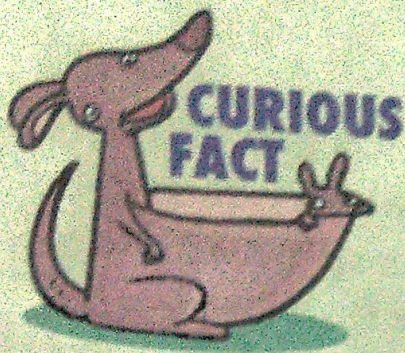
Once they have the prey in sight, they use a variety of hunting methods. They swoop down on beetles, chase after flying insects, and kill small birds, lizards,

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*European Red-backed Shrike*







## Weapons for the Finch

The woodpecker finch uses twigs as a tool, and also as a weapon. When it is angry, the woodpecker finch will brandish a twig at its enemy to drive it away.

and frogs with a sharp peck to the head. Once it is killed, shrikes impale the prey on thorns in order to build up a food supply for periods of bad weather.

These 'larders' resemble butcher shops, and have earned the species the name 'butcher bird'.

### Why are woodpecker finches considered excellent tool users?

The woodpecker finch is a bird that is famous not for its beauty, but for its clever use of tools. In order to extract grubs

from twigs, it is known to find a hard short twig, break it into the right length, and use it to spear and extract insect prey.

Sometimes, instead of a twig, the bird will fly off to find a cactus spine. It will then use the cactus spine to drive out or spear an insect that is hiding in the crevice of a tree bark.

This bird is also intelligent enough to adapt a tool for a particular task. For example, it will trim the spines of a cactus with its bill, if necessary. Thus, the woodpecker finch is a tool maker as well as a tool user.





# Super Tricksters



## Why do some animals play tricks on others?

**Y**ou play tricks on your friends for the fun of it. In the case of animals though, tricks are played not for fun, but for their survival.

Animals are either predators or prey. Predators hunt and kill other animals for food, while the animals that are hunted are known as prey.

Predators have to stalk and chase their prey, and very often, they are not successful. So, pred-

ators try to trick their prey into believing there is no danger, and then attack.

The prey, on the other hand, tries to trick a predator in different ways, so that it can escape. Animals have therefore devised incredible ways to trick other animals, either to eat or to escape from being eaten.







## What is the trick played by the hognose snake?

**H**ognose snakes are a species of snake that have upturned snouts, similar to that of a hog.

They are cunning snakes who will pretend to be more vicious than they really are, to scare off an enemy. They flatten their necks, and raise their heads, so that it looks as though they have a hood like cobras do.

To complete the pretense of being a cobra, they also

## *Hognose Snake*

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hiss and make striking actions. If this fails to scare away an enemy, a hognose snake will pretend to be dead. This works, because there are few creatures in the world that will actually eat carrion.

Hognose snakes are great actors, and will play dead very effectively. They lie on their backs with their mouths open, and will even give off a foul smell to make their act more believable.



## Why is the brown thornbill a trickster?

**T**he brown thornbill is a small Australian bird that is an excellent mimic.

One of its biggest enemies is the pied currawong, which raids its nests, and hunt its chicks. Pied currawongs themselves are hunted by goshawks.

So, the brown thornbill will cleverly mimic the warning cry of other small birds when they see a hawk. This fools the pied

currawong into believing that a goshawk is approaching, and it will fly away.

The brown thornbill will also mimic the cries of other hawks. This tricks the pied currawong into believing that a massive hawk attack is going to take place.

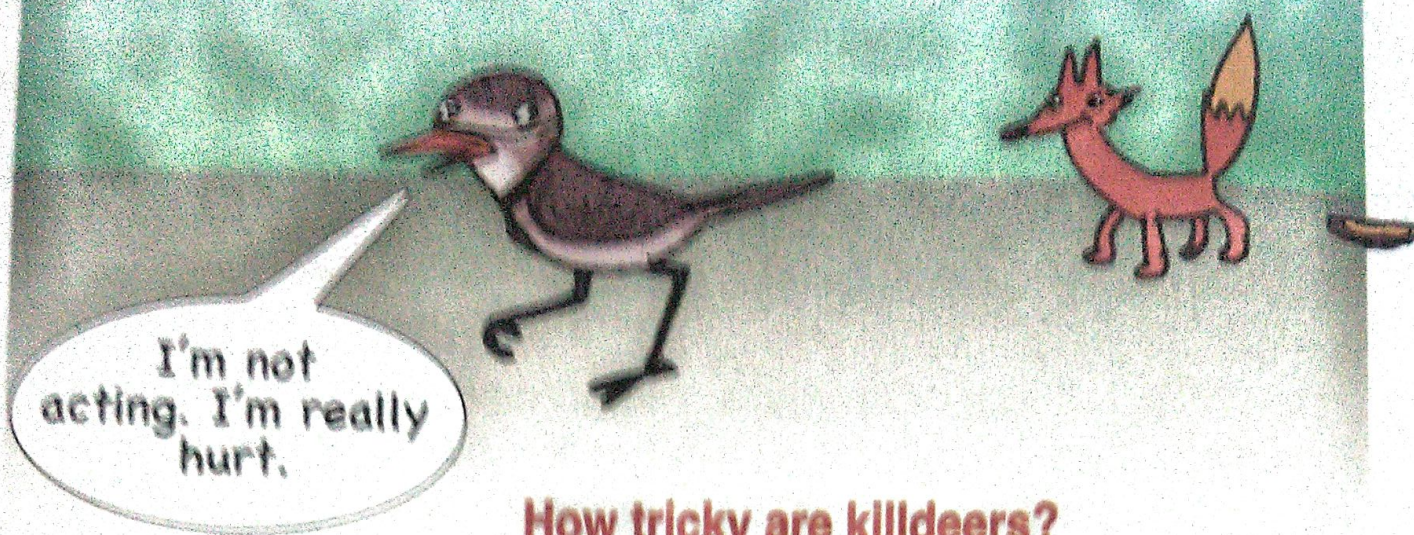
The brown thornbill is one of Australia's smartest native birds. Proof of this lies in the manner that it cleverly outwits its much larger enemies.

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### *Brown Thornbill*



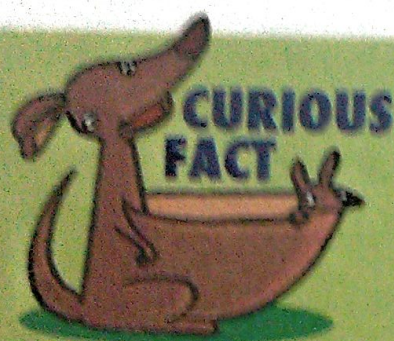




### How tricky are killdeers?

**K**illdeers are medium sized birds that have a loud piercing call. They usually nest in open areas with sparse vegetation. Their nests are designed to blend in with the surroundings.

If a killdeer sees a predator approaching its nest, it will draw the enemy away by pretending to be crippled.



### Super Swimmer

The killdeer is a super swimmer. Adult birds can swim across fast flowing rivers. Chicks too, swim over small streams.

● *Radha Nair*

### How does cinereous mourner trick others?

**C**inereous mourners are birds found in Latin America whose baby chicks or nestlings have an unusual way of escaping the notice of predators.

These chicks are totally at the mercy of other birds as they wait in their nests for their parents to bring them their food.

So, what do they do in order to survive? Instead of hiding, they make them-



The killdeer will walk away from the nest, holding its wing in a position that suggests that the wing is broken. It will heighten this impression by flapping on the ground, and crying in distress. This distracts the predator, who thinks that it has spotted an easy prey. The predator goes after the killdeer, which draws the predator further and further away from its babies.

Finally, when the predator is a good distance



*Killdeer*

away from the nest, the killdeer will drop the act and fly off, confident that its nest and babies are now out of harm's way.

Though adult cinereous mourners are a drab brown in colour, the chicks have feathers that are a bright orange, tipped with white.

The reason for this is that the chicks want to imitate a species of very poisonous caterpillar. These bright orange and white caterpillars are found close to the cinereous mourner's nest, and they are so toxic that predators avoid them at all costs.



## STAR FACT

### Batesian Mimicry

Batesian mimicry is a form of biological trickery. The cinereous mourner takes on the characteristics of a dangerous organism. This tactic is common in insects, but rare in birds.



What is the dresser crab's favourite trick?

**D**resser crabs are small crabs found off the coast of Australia.

Many fish hunt them, so they have found a way to fool their enemies. As a dresser crab moves along the reef where it lives, it scans its surroundings for any objects it can attach to the velcro-like hooks on its shell.

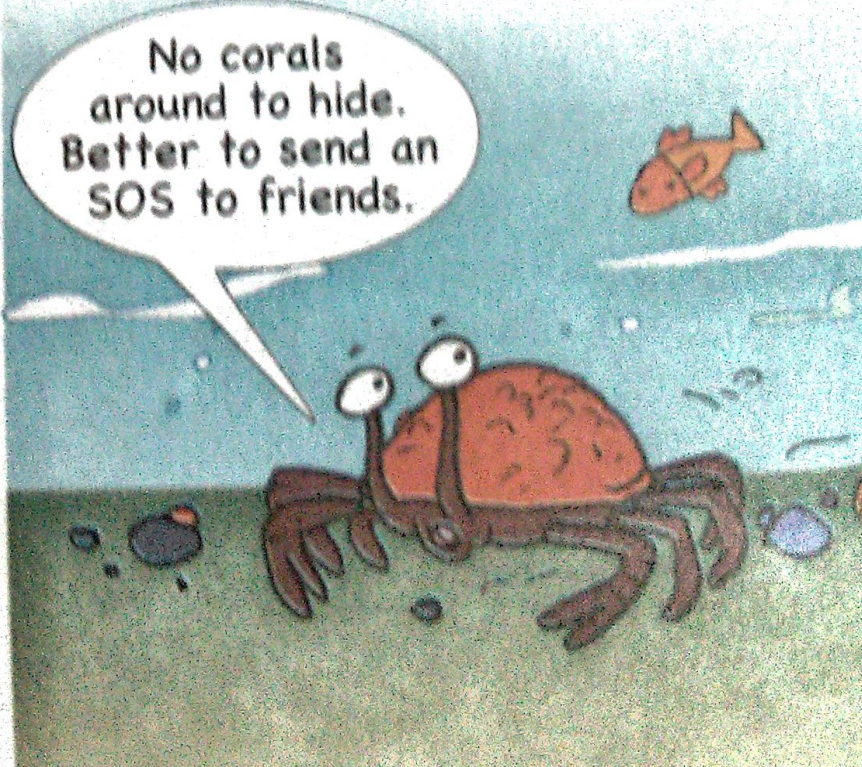
Some species deck their shells with living coral polyps and sea anemones. Sea anemones have stinging tentacles, so predators usually avoid them.

Others dress themselves in poisonous seaweed which they stick to their shells, using a glue-like secretion.



*Dresser Crabs*

Ever thrifty, these crabs will recycle their decor when they moult. They remove their fittings from the old shell, and reattach it to the new when it hardens. When the dresser crab senses danger, it will freeze dead in its tracks, and flawlessly merge into the background, to become practically invisible.

A cartoon illustration of a red dresser crab on a sandy beach. The crab has large, white eyes and is looking upwards. A speech bubble above it contains the text: "No corals around to hide. Better to send an SOS to friends." In the background, there is a small orange fish swimming in the water, and some small, colorful objects (possibly coral or shells) are scattered on the sand.

No corals  
around to hide.  
Better to send an  
SOS to friends.





## Speedy Turtles

Turtles are slow, but snapping turtles might say that humans are slow! The modern snapping turtle evolved over 40 million years ago, while modern humans emerged only 200,000 years ago.

### *Snapping Turtle*

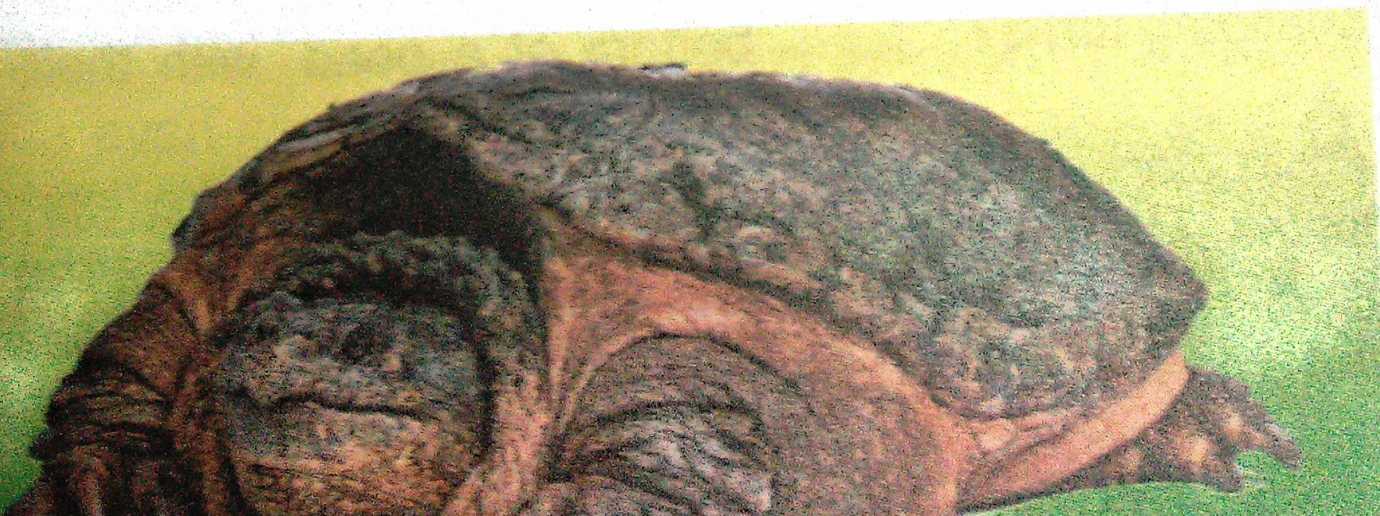


## What trick does the snapping turtle use?

**T**he snapping turtle is a large fresh-water turtle that has powerful, beak like jaws, and a very mobile, long snake-like neck.

However, these turtles cannot pull their head and legs into their shell for protection against predators, as most other turtles can.

Snapping turtles make up for this lack of body armour with an aggressive temperament. They snap and





bite when removed from the water, but they become docile when placed back into the water.

Snapping turtles like to bury themselves in mud, with only their nostrils and eyes exposed. They have a small growth on the end of their tongues that looks like a wriggling worm.

To capture fish, the snapping turtle opens its mouth to make the 'worm' visible. When a fish comes to eat the 'worm', the snapping turtle grabs it with its strong jaws.

### **What is the favourite trick of the alligator snapping turtle?**

**A**lligator snapping turtles are the largest among freshwater turtles.

They have powerful jaws and a large head,



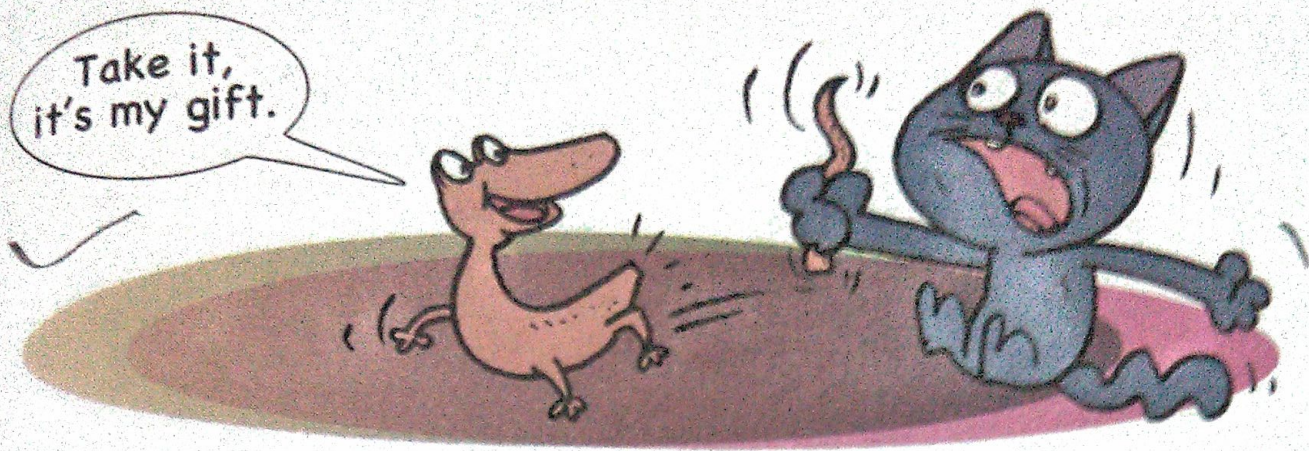
*Alligator Snapping Turtle*

and are unique among snapping turtles, for they have eyes on the side of their heads. They look rather like small dinosaurs.

These turtles can remain submerged for 40 to 50 minutes at a stretch, and only go to the surface for air. They remain so still that algae may cover their backs. This fools other fish into thinking they are algae covered rocks.

But their favourite trick is to sit at the bottom of a pond, with their mouths open. Their tongues have small pink structures that look like worms. This structure lures fish into the turtle's mouth. As soon as they do so, they are either swallowed whole, or sliced into two, as the turtle snaps its sharp jaws shut.





### Why is a lizard's tail remarkable?

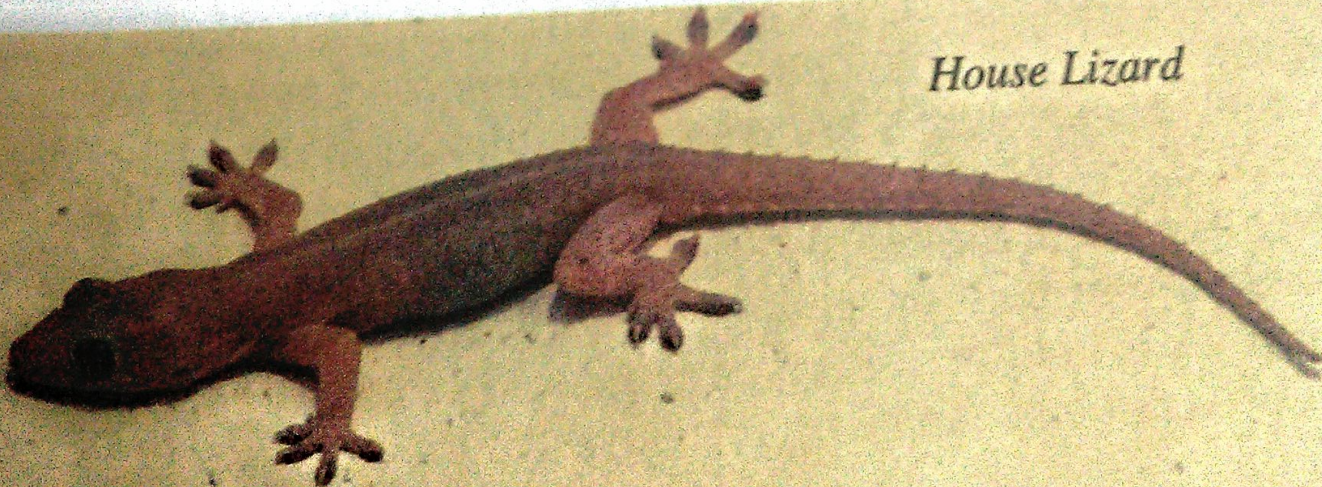
If you catch a lizard by its tail, it will simply detach the tail, and flee. This is a form of defense some animals use to escape from predators. It is called autotomy.

The detached tail continues to wiggle for some time to confuse the enemy. The lizard will grow a new tail over some weeks. Some geckos will throw off their tail when they are under stress or danger, even if

the tail is not grasped by an enemy.

In fact, tail loss may save a lizard's life but it also causes some problems for the animals. First, it will generally affect the lizard's sense of balance.

A lizard without a tail may have trouble climbing up walls. Secondly, losing its tail makes a lizard more susceptible to predators. Without a tail, it no longer has anything to drop if it is caught, so its chances of escaping are less.



*House Lizard*





## Why are wobbegong sharks so strange?

**W**obbegong sharks are found off the coast of Australia. They are strange looking creatures that look as though they have a beard.

In fact, in the language of the Australian Aborigines, the word 'wobbegong' means 'shaggy beard'. These sharks are also called carpet sharks, because their greenish brown skin is covered with bold patterns so that they appear to be a carpet spread on the ocean floor!

### *Wobbegong Shark*

This colouring also gives the sharks excellent camouflage to fool enemies. They are also extremely lazy, and remain motionless to hide from their predators and their prey. When bottom dwelling fish and smaller sharks, crabs, lobsters, and even octopuses are tricked into coming near them, these sharks will quickly snap the prey up.

So you can say that wobbegongs get their meal delivered right to their doorstep!

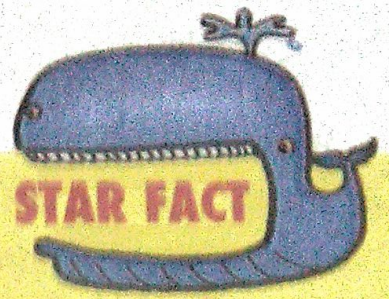


## Why are anglerfish amazing?

**A**nglerfish are one of the strangest looking fish that you will ever see. They get their names from a protuberance above the mouth of the females of the species, which looks like a fisherman's, or angler's pole.

At the tip of this pole, there is a small bulb-like organ that gives off a blue green glow. The glow is produced by luminous bacteria that live in the bulb.

The creature's built-in rod baits prey close enough to be snatched. The glow actually acts as a lure, and tricks the prey into coming close to the fish. The mouths of these fish are so big, and their bodies so pliable, that they can actually swallow prey up to twice their own size!



### STAR FACT

## Anglerfish

The anglerfish has a round body that resembles a ball, and indeed, it looks like it could easily swallow one too.

● Dev Nath

*Anglerfish*





## How does the spider eating assassin bug fool the spider?

**S**piders weave webs to trap unsuspecting insects- but there is one bug that is smart enough to fool spiders. It is the

As it approaches the point where the web is vibrating, the assassin bug will pounce on the spider, and kill it.

Some assassin bugs camouflage themselves by covering their bodies with the carcasses



assassin bug.

When an assassin bug finds a spider web, it taps on the silk threads. The threads will start vibrating. This fools the spider into thinking that an insect has been trapped in the web.

### *Spider Eating Assassin Bug*

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of ants that they have killed.

So, at first glance a predator does not realize there is a bug...all it sees is apparently a ball of dead ants!





*Margay*

## How do margays trick monkeys?

**M**argays belong to the cat family. They are found in South and Central America. The margay is the only cat that can rotate its hind legs 180 degrees.

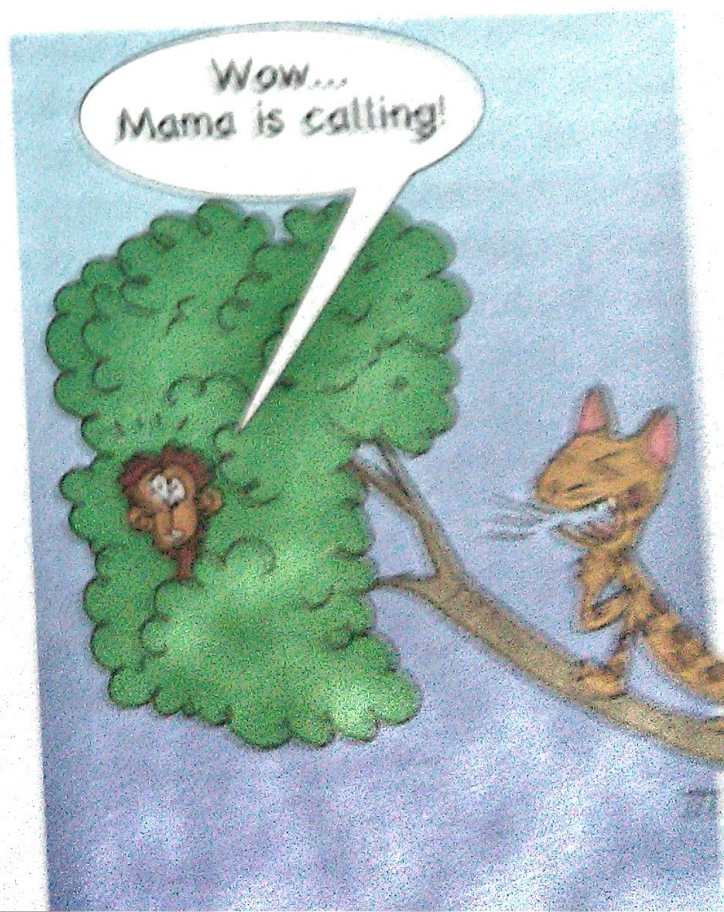
This enables it to run down trees, head first, like squirrels do. It can also hang from a branch head down, by one hindlimb.

The margay is a very good mimic. It can disguise its voice to mimic the call of other animals that are its prey.

Margays have been observed imitating the calls

of squirrel-sized monkeys known as pied tamarins. They make sounds similar to those made by the babies of this species.

When the other monkeys come out to investigate, the margay will attack, and kill them.





## What tricks do opossums play?

Opossums are generally peaceful animals. They prefer to avoid a fight, if at all that's possible. They move slowly on the ground, and are vulnerable to predators, which include dogs, coyotes, and foxes. If cornered, opossums will hiss, growl, and even bite. When this tactic fails, they will pretend to be dead.

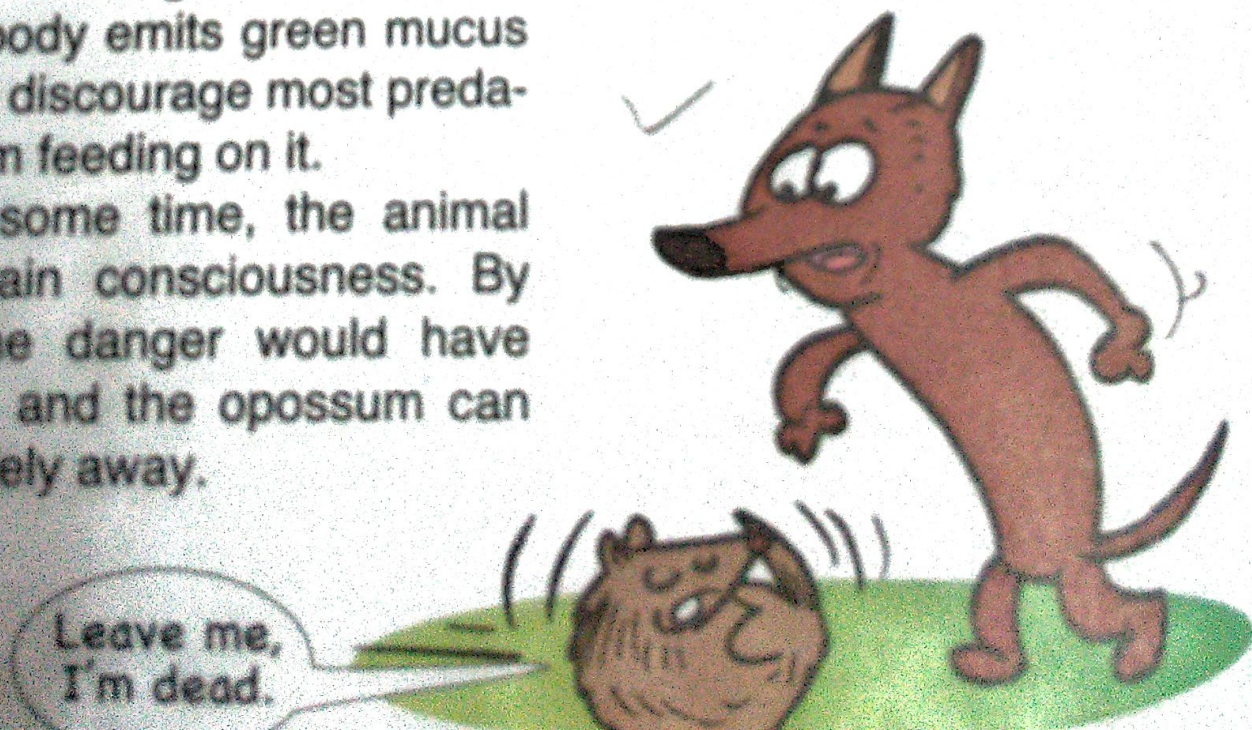
What actually happens is that the stress of danger sends the opossum into a state of shock, and it goes into a sort of coma. While 'dead', the opossum's body is limp, its front feet form into balls, and drool runs out of its mouth. It will even produce a smell of decay.

From its anal glands, the opossum's body emits green mucus that will discourage most predators from feeding on it.

After some time, the animal will regain consciousness. By then, the danger would have passed, and the opossum can walk safely away.



*Opossum*







## Great Travellers

### What is animal migration?

**A**nimal migration is a fascinating phenomenon that nature repeats every year.

It is the seasonal movement of some animals, from one place to another, year after year, usually across vast distances.

Birds, fish, mammals, insects, and reptiles all migrate. Animals migrate for many reasons. It may be to find food, or to escape

### *Migrating Birds*

harsh weather. Some may travel thousands of miles in the spring, and then, thousands of miles back in the fall. Animals also migrate in search of better food supplies, or a safe place to give birth to their young.

Such migrations happen on a regular basis. Irregular migrations are sometimes triggered by famine, or over-population.

Animal migration is truly, not just a fascinating, but also an inspiring phenomenon.





### *Arctic Tern*

#### **Why is the Arctic tern's migration so incredible?**

**T**he Arctic tern is truly incredible. This seabird travels from one end of the world to the other end, every year!

This is the longest migration undertaken by any bird. This tiny bird flies in zigzagging routes between breeding grounds in the Arctic and Antarctica each year- a distance of around 44,000 km.

Starting in August and September, this small bird - which weighs little more than 100g - will head away from Greenland with the intention of getting to the Weddell Sea, on the shores of Antarctica.

Arctic terns make a lengthy stop-over in the middle of the North Atlantic. Here, they feed on zooplankton and fish, to fuel them for the long journey ahead. They will spend about four or five months in Antarctica, before heading back to the Arctic, arriving home in May or June.

*Tell Me Why*



What is amazing about the journey of the humpback whale?

**H**umpback whales live in oceans across the globe, and can be seen in shallow waters.

But, what is truly amazing about them is the journey they undertake every year- the longest migration for any mammal.

Each species travels to warmer tropical waters during the winter months, to give birth to young ones.

Then, they swim to the rich, colder waters of the Arctic

or the Antarctic to feed for the summer. Some of them travel more than 9800 km during this annual migration.

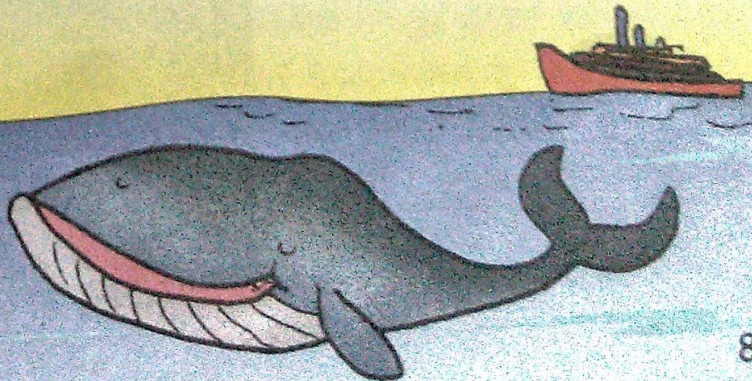
Because seasons are reversed either side of the equator, Northern and Southern Hemisphere populations of humpbacks probably never meet.



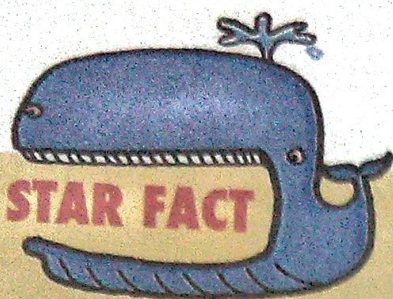
*Humpback Whale*

Those in the north, travel towards their breeding grounds in tropical waters, while those in the south are travelling towards the Pole to feed, and vice versa.

Pardesi...  
pardesi...  
Jana nahi...







## STAR FACT

### Number One

There is stiff competition as to which bird is No: 1 in the distance it travels during its annual migration. Is it the arctic tern, or the sooty shearwater? Suffice to say that the distances travelled by both are mind boggling!

● Sneha Rao

## What is spectacular about the sooty shearwater?

**T**he sooty shearwater is a seabird that is famous for the spectacular migration it makes every year.

It nests only deep in the Southern Hemisphere, around Australia, New Zealand, and South America.

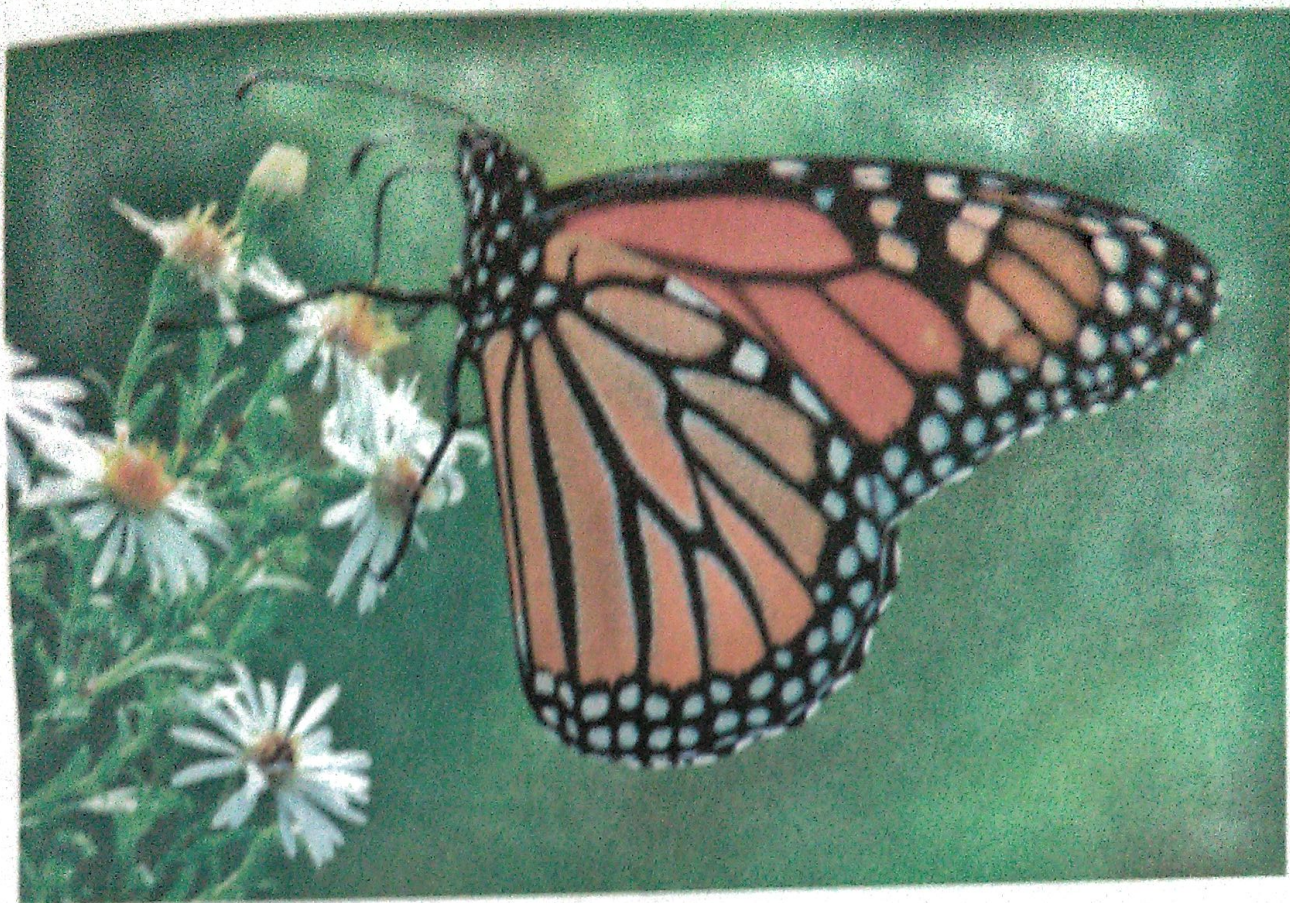
These birds travel a circular route, up the western side of the Pacific and Atlantic Oceans at the end of the nesting season in March to May, and reach subarctic waters in June to July.

Then, they cross from west to east, and return south, down the eastern side of the oceans in September and October.



*Sooty Shearwater*





### *Monarch Butterfly*

Finally they reach their breeding colonies in November. This is the second longest migration of birds in the world.

### **Why is the migration of the monarch butterfly unique?**

**T**he monarch butterflies' migration is one of the most spectacular natural phenomena in the world.

The monarch migration spans 7,000 kilometres, but what is really astonishing is

that this migration is completed by three to four generations.

This is because the migration takes longer than the butterfly's lifespan. Monarch butterflies fly at speeds ranging between 19 to 40 kilometres an hour.

They can travel between 80 to 160 kilometres a day. This annual migration must also be one of the most colourful in the world. During the migration, tens of thousands will land on a single tree in certain areas along their migratory path.





*Dragonfly*

### **Why is the dragonfly's migration remarkable?**

**A**mongst insects, the longest migration is that of dragonflies. These tiny animals cover an astonishing 16,000 km in their odyssey from India to eastern and southern Africa.

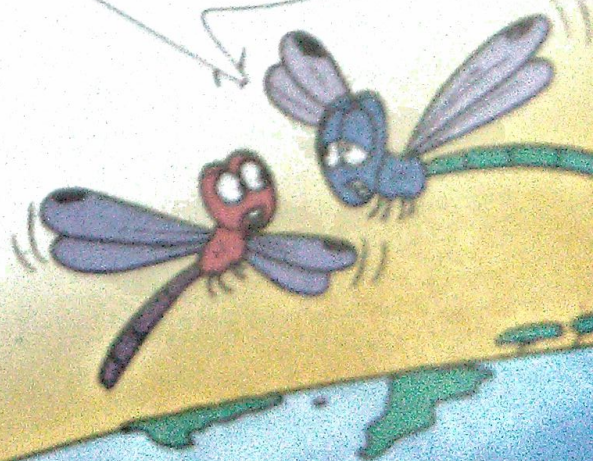
The migration starts after the monsoon ends in India. The dragonflies seem to follow the rains as they fly to their destination and back.

Since no dragonfly lives long enough to finish a cycle, it is like a relay race that is completed only after four generations.

Each generation continues the journey from where the previous one died. These tiny winged insects are expert fliers. They have to be because they only eat the prey that they catch while flying.

Dragonflies can fly up, down, sideways and even hover, like a helicopter! Dragonflies have excellent eyesight. Dragonflies can see in every direction, except right behind them. There are over 3,600 kinds of dragonflies on the Earth.

Son.. Now  
you can start your  
journey around  
the globe.







### Why is the salmon's home-coming special?

**S**almon are fish that live in the North Atlantic and Pacific Oceans.

Interestingly, most types of salmon are born in rivers, and they then migrate to the sea.

Once they reach the sea, they set off on a journey of thousands of kilometres to reach their ocean feeding grounds. After spending three to four years at sea, they swim back across the ocean to the river where they were born.

### *Salmons*

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They have to fight strong currents as they head hundreds of miles upstream, but nothing can stop them. They will even jump up and over waterfalls!

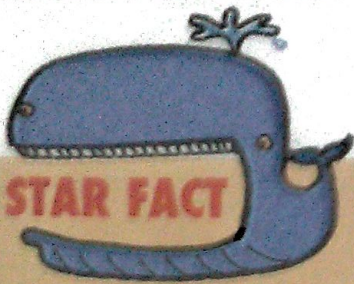
When they reach their destination, the females lay their eggs in the riverbed. This is called spawning.

After spawning, 95 per cent of all adults die. But those that survive head back out to sea. When the eggs hatch, a new generation of salmon prepares to start the great migration all over again.





*Adelie Penguins*



### STAR FACT

## Ross Island

Ross Island is an island formed by four volcanoes in the Ross Sea, near the continent of Antarctica. It is inhabited by more than half a million Adelie penguins, making it one of the largest animal colonies in the world.

## Why are Adelie penguins interesting?

**A**delie penguins are found along the coast of Antarctica. They are short and fat and the smallest among the penguins of Antarctica.

They are extremely social, and live in large colonies. No penguin, indeed no other bird, breeds further south than Adelie penguins.

What is interesting about them is that they migrate the longest distance among penguins- about 17,600 km.





In winter, they inhabit large platforms of ice where food is plentiful. They move to their breeding grounds during the Antarctic summer months of November and December.

These penguins head for the coastal beaches that are relatively ice free. They build their nests on rocky slopes to breed.

A true Antarctic penguin, the Adelie is one of two penguin species that breed only in the Antarctic continent.

### **What is unusual about the semipalmated sandpiper?**

**S**emipalmated sandpipers are shore birds that perform the unusual feat of flying non-stop for vast distances during their migration.

They breed along the coast of Hudson Bay and Northern Alaska. During the non breeding



*Sandpiper*

season, they migrate to Central America, the Caribbean and South America.

The migration begins in May, when these birds take off from South America heading north towards their breeding grounds in the sub-arctic of Canada and Alaska.

In July, they head back south again. The journey is about 3000 to 4000 km long. It is so tough that young birds don't even attempt it till their second year.

The birds travel in large flocks. Sometimes there will be as many as 350,000 birds flying together, and this is an awesome sight indeed!



## What is amazing about the migration of the wildebeest?

**T**he migration of the wildebeest is one of nature's grandest spectacles.

Towards the end of March, the short-grass plains of the southernmost Serengeti in Africa begin to dry out and millions of wildebeest begin their journey towards the western woodlands.

Beginning in January and February, vast herds move from the Serengeti plains west towards Lake Victoria. They do not travel alone on this journey of over 1600 km.

They are accompanied by as many as 200,000 zebras and 500,000 gazelles. It is an arduous trek across crocodile infested rivers, with death from prowling lions and other predators as a constant companion.



*Great Migration of Wildebeest*

This journey of amazing courage and determination is unparalleled in its immensity and awesomeness.

## What is the red crab of Christmas Island famous for?

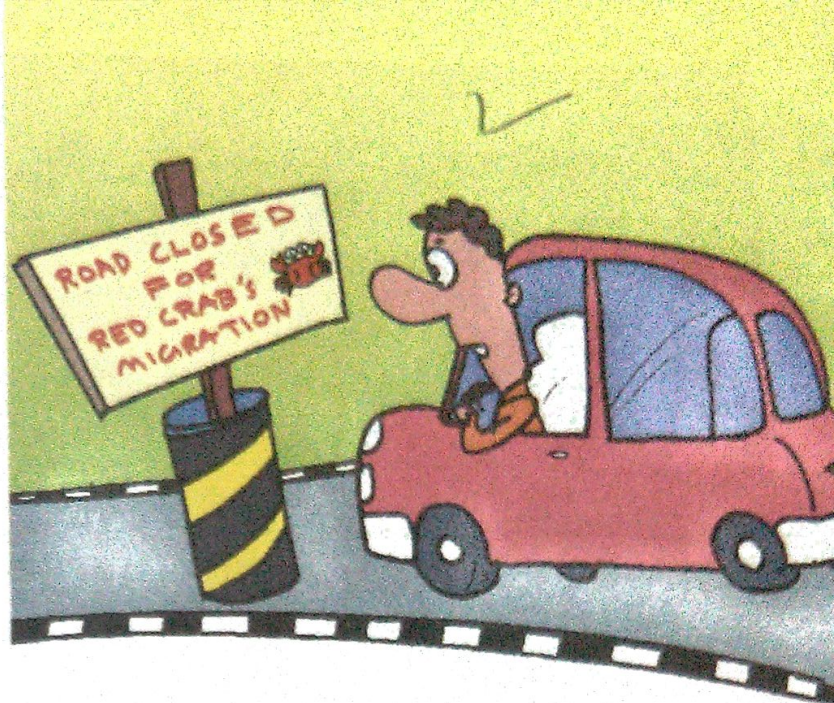
**T**he red crab is found only on Christmas Island off the coast of Australia.



During the dry season, they live in burrows that they dig throughout the forest, eating fallen leaves, seedlings, fruits, and flowers.

However, during the wet season in October and November, they embark on an amazing migration to their breeding grounds by the seaside.

Millions of them move together in colourful waves of red. To reach their destination they have to pass through town, across roads, through jungles, and down a cliff. People find crabs all over their lawns, on their driveways and even in their houses.



Sometimes roads are closed to traffic to allow them to move along. When the crabs arrive at the shoreline, they dip in the sea to replenish body moisture. The females lay eggs and then they will start their return migration.

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### *Red Crab*







## Amazing Hunters

**Why are komodo dragons excellent hunters?**

*Komodo Dragon*

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**K**omodo dragons are the largest lizards found in Indonesia. They weigh up to 70 kg, and can be 3 metres in length.

They are born hunters. They have a keen sense of smell that helps them locate their prey from even 10 km away. Komodo dragons ambush their prey, and strike them down with their powerful tails.

They inflict massive wounds by biting and tearing into the prey ferociously. The wounds provide a large open area for the dragon to inject its venom. The komodo dragon's flexible jaws make it possible for it to eat prey that is much larger than itself.



## Why are killer whales called the wolves of the sea?

**K**iller whales or orcas, are found in all the oceans in the world.

They are often called 'wolves of the sea' because they hunt in groups, just as wolves do. Killer whales travel in groups called pods that range anywhere from 5 to 60 whales. The pods are led by females.

Scientists have found an incredible variety of meals in killer whales' stomachs. Along with a variety of fish, scientists have found squid, seals, walruses, sharks, penguins, turtles and even polar bears.

Killer whales don't fear any creatures, on land or in sea. They can attack and kill even blue whales, the largest mammals on earth. They have the second heaviest brain among marine mammals.

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*Killer Whale*







### Why is the grizzly bear considered an expert at fishing?

**G**rizzly bears or brown bears, hunt and kill large mammals like moose, elk, caribou, deer and bison.

They also feed on fish as well as dead whales, seals, and sea lions. It is very interesting to watch a grizzly bear fishing.

Even though grizzly bears are extremely large, they can run up to 56 kilometre per hour. It will wait patiently by a stream for the right moment to attack. Then it will strike out swiftly with its powerful claws, and the fish is killed in one swipe.

### *Grizzly Bear*

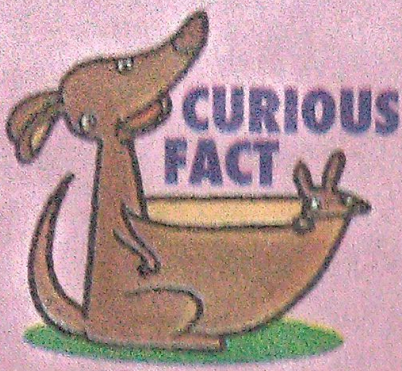
### How does the great white shark hunt?

**T**he great white shark is huge. It can weigh as much as 3,324 kg!

It feeds mainly on fish, which it kills by ambushing. Great white sharks hunt close to the shore. They use their speed and colouring to help them hunt.

They search for prey that is on the surface





## Jaws

'Jaws' is a 1975 thriller film directed by Steven Spielberg, based on Peter Benchley's novel by the same name. It is about a great white shark that is a ferocious man eater. Actually, these sharks do not like human prey much. However, they do make attacks on swimmers.

while they swim below. Once they spot, a target they use a burst of speed to bump their prey.

At the same time, these sharks will bite their prey ferociously with thousands of sharp white teeth that are arranged in rows. A single bite is usually fatal.

## Why is the tarantula interesting?

**T**arantula spiders have large bodies and legs. They are skilled hunters who prey on insects as well as frogs,

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*Great White Shark*





toads, and mice. They live in burrows, and are interesting because they do not spin webs like other spiders do.

These spiders grab their prey with their legs. They then inject paralyzing venom, and bite their prey with their fangs. They also secrete digestive enzymes to liquefy their victims' bodies.



*Tarantula*

This liquid is then sucked up through their straw-like mouth openings!



*Piranha*

### Why are piranhas dangerous?

**P**iranhas are small fish that live in the rivers of South America.

They are very dangerous. They have very strong, sharp pointed teeth that can bite through a hook made of silver.

Their jaw bone is so strong, that it can crush a human hand in 5-10 seconds. Piranhas are cannibals. They eat their own species.

They will attack and eat other piranhas when other meat sources are not available.

Piranhas attack as a group, and can finish off a human body in seconds.



## Why is the black mamba feared?

**T**he black mamba is the longest snake found in Africa, and the second longest in the world.

It can be up to 22 metres in length. Black mambas are the fastest of snakes, and are very aggressive.

When threatened, a mamba will open its mouth to show a black inner lining as a warning. It will then strike repeatedly, and inject large amounts of venom.

The black mamba is one of the deadliest snakes in the world. Two drops of its poison can kill a person.

Its aggressiveness, and poison make it one of the most feared among snakes. These snakes are active during the day.



*Black Mamba*

## Why are grey wolves outstanding hunters?

**G**rey wolves are the largest wild members of the dog family.

Wolves hunt in packs for large prey such as deer, moose, sheep, goats, caribou, elk, bison, and musk-ox. Wolves also prey on rodents, beavers, fish, and birds.

Grey wolves are known to roam large distances, perhaps 20 km in a single day to hunt for food. They run very fast, and can reach speeds of 65 km per hour when chasing their prey.

They are social animals who communicate, and cooperate with each other while hunting.



# I Wonder Why?



## Question of the Month

Patients  
are always  
welcome.

### Do animals treat their wounds?

Animals do treat their wounds, but not by going to a hospital. Many animals have their own methods of treating wounds.

Licking their own wounds is the most effective of them. Licking is highly beneficial, because animal saliva is very effective in killing germs. It also heals wounded tissues.

Besides licking wounds, some animals medicate themselves too. One good example is the Anubis baboon which eats fruits and leaves to control the disease schistosomiasis- a disease that affects the intestine. Likewise, bears roll in clay to treat skin wounds.

Question sent by:  
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● **Indhu Thomas**